THE UNIVERSITY OF ALBERTA

SNACKING HABITS OF HIGH SCHOOL STUDENTS

by

© Carol L. McLean

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE

OF MASTER OF EDUCATION

IN

DEPARTMENT OF SECONDARY EDUCATION

EDMONTON, ALBERTA

FALL, 1979

THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled The Snacking Habits of High School Students, submitted by Carol Louise McLean in partial fulfilment of the requirements for the degree of Master of Education

Marion Lefebvre

Supervisor

H. Patricia Brogden

Ann L. Harvey

Date Sept. 14, 1979

ABSTRACT

The literature revealed that the eating habits of high school students included a good deal of snacking. These snacking habits, however, were not well defined and the factors affecting these snacking habits were contradictory and inconclusive.

A survey designed and administered by the researcher sought information regarding the demographic, family background, and psychographic characteristics of the sample as well as information concerning the actual snacking habits of the sample. A total of 254 responses were collected from a stratified random sample of high school students attending Edmonton Separate Schools.

Descriptive statistics were used to categorize snack definitions and to describe snacking habits. Spearman's rho and the Chi-square test of independence with an eta-squared measure of association tested for relationships between snacking habits and demographic, family background, and psychographic factors.

Students were able to define a snack as "eating a small amount of food in between meals to satisfy hunger or to fill the gap until the next meal". Though none of the demographic, family background or psychographic factors could be used to predict the snacking habits of high

school students, analysis of the snacking habits yielded the following:

1. High school students snack frequently, and, contrary to popular opinion, generally on foods which are nutritionally and dentally sound.

2. High school students snack most frequently at home, after school or in the evening, and alone or with a friend rather than with a member of their family.

In addition, other findings included the following:

1. The highest proportion of meal skipping occurred among students who took senior high home economics only and among those students who ate all meals alone.

2. Most students were actually the correct weight and also perceived their weight correctly. However, of those students who misperceived their weight status, females perceived they were overweight while males perceived they were underweight. In addition, more males than females were actually overweight.

3. For girls, the majority of the home economics courses taken were at the junior high level, while for boys the majority of the home economics courses taken were at the senior high level.

4. The gatekeepers of meals in the household for the majority of the students were their parents.

The findings from this study have implications for curriculum development in nutrition education.

ACKNOWLEDGEMENTS

Sincere gratitude is extended to Dr. Verna Lefebvre, major advisor, for her continuous guidance and support throughout the preparation of the thesis. Appreciation is also expressed to the other members of the thesis committee: to Dr. Ann Harvey for her encouragement throughout the entire graduate program and for the initial impetus in this thesis; to Mrs. Pat Brogdon for her valuable suggestions for improvement of the report.

Thanks are extended to the Edmonton Separate School Board personnel whose cooperation made this study possible, and to the high school students who so enthusiastically participated in this study.

Deepest appreciation is expressed to my husband Wayne for his emotional support, statistical advice, and assistance in the mechanics of producing a thesis.

TABLE OF CONTENTS

CHAPTER		PAGE
I	INTRODUCTION	1
	Background to the Problem	1
	Problem Statement	3
	Related Research Questions	4
	Definition of Terms	5
	Limitations	9
	Assumptions	9
	Justification for the Study	9
II	REVIEW OF THE LITERATURE	11
	Development of Food Habits	11
	Physiological Perspective	14
	Sociocultural Perspective	15
	Needs Satisfaction Perspective	17
	Availability and Acceptability Perspective	18
	Individual Differences Perspective	22
	Family Influence Perspective	22
	Influence of Adolescent Sub-culture	25
	Food Habits of Adolescents	26
	Family Background	33
	Individual Differences	34
	Peer Group	35

III RESEARCH METHODOLOGY 37
Design of Survey Instrument 37
Rationale 37
Structure 37
Pretesting 39
Validity 39
Reliability 40
Sample Selection 40
Data Collection 41
Data Analysis 43
Data Reduction 43
Sample Description 46
Research Question One 47
Research Question Two 47
Research Question Three 47
Research Question Four 49
Research Question Five 50
IV RESEARCH RESULTS 52
Sample Description 52
Demographic 52
Family background 56
Psychographic 59
Research Question One 61
Research Question Two 63
Research Question Three 68
Research Question Four 75

Research Question Five 79

V DISCUSSION OF RESULTS 83

Sample Description 83

Demographic 83

Family Background 86

Psychographic 88

Snack Definition 90

Snacking Habits 91

VI CONCLUSIONS, IMPLICATIONS, AND SUGGESTIONS FOR FURTHER RESEARCH 96

Conclusions 96

Snack Definition 96

Snacking Habits 97

Implications 99

Suggestions for Further Research 101

Summary Statement 103

REFERENCES 104

APPENDIX A. Height-Weight-Age Tables 110

APPENDIX B. Questionnaire 113

APPENDIX C. Data Reduction 120

APPENDIX D. Ranking Technique 133

APPENDIX E. Sample Description 136

APPENDIX F. Snack Definitions 162

APPENDIX G. Snacking Habits 165

APPENDIX H. Snacking Habits by Demographic 175

Variables

APPENDIX I. Snacking Habits by Family Background Variables 210

APPENDIX J. Snacking Habits by Psychographic Variables 232

LIST OF TABLES

Table		Page
1.	Snack Food Preferences Reported by Huenemann	28
2.	Description of Sample According to School and Class Surveyed	42
3.	Observed Snack Food Preferences	65

LIST OF FIGURES

Figure	Page
1. Frame of Reference of Observed Food Behavior	13

CHAPTER I

INTRODUCTION

Background to the Problem

The high nutritional requirements of adolescents, their psychological need to establish independence, and the difficulty of reaching adolescents with effective nutrition education programs, combine to make improvements in the nutrition of teenagers a challenge to the nutrition educator.

Although Alberta is considered to be an affluent province, there are still many manifestations of nutritional problems among teenagers. This fact was made evident by the Nutrition Canada Survey undertaken between 1970 and 1973 in response to a growing concern about the impact of a changing diet and lifestyle on the health of Canadians. Teenage boys in Alberta were found to have marginal intakes of iron and Vitamin D; teenage girls had marginal intakes of Vitamin D, calcium, and Vitamin A, and inadequate intakes of iron (Nutrition Canada Alberta Survey, 1975). In its severest form, malnutrition may affect growth and learning ability (Birch, 1972, p.773). More commonly in teenagers, however, it manifests itself as listlessness, inability to concentrate in school,

susceptibility to infection, and continual fatigue (McCaie, 1978, p.8).

One of the major uses intended for the information collected by the Nutrition Canada Survey was to act as a basis for planning future educational programs. In identifying future nutritional priorities, Health and Welfare Canada emphasized that nutrition affects both physical and mental development and as such should be adequately emphasized in school curricula. According to Nutrition Canada, development of meaningful nutrition education programs will necessitate trying imaginative approaches and assessing their effectiveness, while at the same time recognizing the particular concerns of the audience (Nutrition Canada National Survey, 1973, pp.119-120).

The adolescent audience has been found to display highly irregular patterns of eating due to a highly complex interaction of factors such as: the availability of food, economic status, cultural background, social influences, family eating patterns, educational influences and personal motivations. In addition to all these factors, it has been suggested that adolescents may be using food as one means for establishing their independence. Gifft, Washbon and Harrison (1972) attempted to put the problem in perspective by postulating that "the adoption of eating patterns calculated to test

adult restrictions and to assert control over one's own life is one of the more innocuous means of expression which may be adopted" (p.240). The peer group is of great importance to the adolescent as the setter of norms, thus the traditional meal patterns of adults may be subverted.

Previous research has described teenage food habits as consisting of meal skipping, fad dieting, and frequent snacking (Huenemann, Shapiro, Hampton, & Smith, 1968). Findings such as these point to the need for nutrition education programs which take into account adolescent's growing need for independence as well as the reality that life for many teenagers does not include traditional meal patterns. The term "snacking" has been used frequently in the literature when describing the eating habits of teenagers (Moomaw, 1978; Thomas & Call, 1973). Its meaning to teenagers, however, has not been fully explored. Perhaps the emphasis in nutrition education programs needs to be on planning for nutritious snacks throughout the day rather than on three basic meals?

Problem Statement

The Nutrition Canada Food Patterns Consumption Report (1973, p.60) stated that approximately 27% of the caloric intake of adolescents was outside of designated meal

periods. Thus the fact that teenagers snack is well documented. The reasons for why they snack, however, are contradictory and inconclusive. The purpose of this study is to investigate factors related to the snacking habits of adolescents.

Related Research Questions

1. How do high school students define a "snack"?

2. What are the characteristics of the snacking habits of high school students?

3. What is the relationship between the snacking habits of high school students and the selected demographic variables of grade, age, sex, weight status, employment status, registration in home economics courses, and disposable income spent on food?

4. What is the relationship between the snacking habits of high school students and the selected family background variables of household size, meal patterns of the household, gatekeeper of meals in the household, degree of parent's influence on food habits, and degree of congenial interaction among family members?

5. What is the relationship between the snacking habits of high school students and the selected psychographic variables of peer group influence, meal

skipping, and level of social activity?

Definition of Terms

For the purpose of this study, the following operational definitions were used:

Snacking: frequent, unplanned eating occurring outside of the designated meal periods of:

breakfast	0500 - 0859 hours
lunch	1100 - 1359 hours
dinner	1700 - 1959 hours.

These times are those used by the Nutrition Canada Survey to define traditional Canadian patterns of meal-time eating (Food Patterns Consumption Report, 1977, p.12).

Snacking Habits: a combination of the following as measured by responses to selected items from the questionnaire (see Appendix B):

1. snack food preferences and consumption frequencies as measured by item 18, and degree of agreement with items

28, 29 and 30 of the questionnaire.

2. time of day of snack consumption and circumstances of snack consumption as measured by the ranking of item 17 and the degree of agreement with items 31, 52, 54 and 55 of the questionnaire.

3. the relative amount of money spent at various outlets and by location of snacking as measured by item 20 and degree of agreement with items 51, 53 and 56 of the questionnaire.

4. companionship when snacking as measured by the ranking of item 16 and the degree of agreement with items 32 and 50 of the questionnaire.

5. frequency of snacking as measured by degree of agreement with items 37 and 46 of the questionnaire.

Employment Status: the holding of a part-time job.

Disposable Income Spent on Food: the amount of money spent on food per day as measured by response to item 19 and degree of agreement with item 43 of the questionnaire.

Weight Status: reported weight in comparison to desirable weight. Correct weight included any figure reported within a range of plus or minus ten pounds of the recommended weight. Underweight was considered to be at least ten pounds less than the recommended weight.

Overweight was considered to be at least ten pounds above the recommended weight. The tables used for comparative purposes are those listed by Krause and Hunscher (1972). See Appendix A for a display of the tables used.

Perceived Weight Status: weight status as measured by student's description of themselves as overweight, underweight, or the correct weight.

Household Size: the number of people who presently live in the household.

Registration in Home Economics Courses: previous and current registration in Grade Eight Home Economics, Grade Nine Home Economics, Food Science 10, Food Science 20, or Food Science 30.

Meal Patterns of the Household: specific meals which people in the household perceive that they eat together in an average day as measured by item 14 of the questionnaire.

Gatekeeper of Meals in the Household: the person who makes the ultimate decision as to what foods will be available in a household as measured by subject response when asked who most often shops for groceries and who usually decides what foods will be prepared for meals in the household as

measured by item 12 and 13 of the questionnaire.

Degree of Parent's Influence on Food Habits: parent's relative influence over food consumed as measured by degree of agreement with items 38, 40, 41, 42, and 45 of the questionnaire.

Degree of Congenial Interaction Among Family Members: how well household members get along with each other as measured by degree of agreement with items 39 and 44 of the questionnaire.

Peer Group Influence: respondent's tendency to be influenced by peers when making decisions about food as measured by degree of agreement with items 27, 33, 34, 35, and 36 of the questionnaire.

Meal Skipping: frequency of skipping breakfast, lunch and the evening meal as reported by items 24, 25, and 26 of the questionnaire.

Level of Social Activity: interaction with other people, involvement in extra-curricular activities, and participation in active sports activities as measured by items 21, 22, 23, and degree of agreement with items 47, 48 and 49.

Limitations

The results of this study are subject to the following limitations:

1. The sample included only high school students in the Edmonton Separate School System.

2. Only regular classrooms were surveyed. Remedial, special education or other special classes were not included.

3. Data collection occurred in the afternoons.

4. Results of the study were limited by the degree of internal validity and reliability of the survey instrument.

Assumptions

1. Responses to the questions on the survey instrument were honest and accurate.

2. The sample was representative of the population from which it was drawn.

Justification for the Study

By studying the snacking habits of high school students, a basis is provided for suggesting activities to

be incorporated into the curriculum in an attempt to make it more meaningful for students. Because good eating habits must become a way of life, the affective domain of learning is ultimately most important in teaching nutrition. The affective domain deals with the formation of attitudes, while the cognitive domain deals with the acquistion of knowledge and does not require overt action based on the understanding gained. In order to develop nutrition curricula in the affective rather than the cognitive domain of learning (as is often the case at present), an accurate description of the snacking habits and the factors affecting the snacking habits of adolescents is necessary.

The most obvious application is the home economics curriculum, but research of this nature is useful to many discipline areas. Social studies, physical education, health and biology are some of the other subject areas that deal with aspects of food consumption. Inter-disciplinary lessons could be developed utilizing the information gained in this study.

CHAPTER II

REVIEW OF THE LITERATURE

Development of Food Habits

The concept of food habits has been defined by many authors. For the purposes of this study the following seem to be most salient. In general, food habits have been defined as "those culturally standardized sets of behavior in regard to food manifested by individuals who have been reared within a given cultural tradition" (Mead, 1943, p.21). Litman, Cooney, and Stief (1964, p.433) stated the idea of food habits more simply: "They may be conceived as the ways in which individuals, or groups of individuals, in response to social and cultural pressures select, consume, and utilize portions of the available food supply". A third point of view is that expressed by Gifft et al. (1972, p.29) who defined the food habits of an individual as "the characteristic and repetitive acts that he performs under the impetus of the need to provide himself with nourishment, and simultaneously, to meet an assortment of social and emotional goals".

The way in which food habits develop has been studied from many points of view. This is due to the inherently different perspective of each discipline involved in the

study of foodways. Because the development of food habits is a complex interaction of many factors, it is difficult to discuss any one factor without reference to the others.

A general model for the development of food behavior is presented in Figure 1. This model by Schafer and Yetley (1975, p.130) exemplifies food behavior as occurring through a patterning process that takes place in an individual in response to information from both external and internal forces. Variations in food behavior occur because of differences in external and internal factors acting on an individual and because of differences in the way an individual patterns or structures these factors. Thus the internal factors operative at any given time will determine how an individual will process external factors concerning food. Once an individual's relationships toward food become anchored in a frame of reference, the frame of reference is used to interpret stimuli regarding food and food-related information. While a person may selectively deal with stimuli to maintain social equilibrium, events may occur which destroy the structured patterns and bring psychologic discomfort. Such an event will require restructuring the frame of reference. An individual attempting to restore stability is open to suggestion and receptive to information that will help restore structure. Thus the contribution of external factors increases. During times

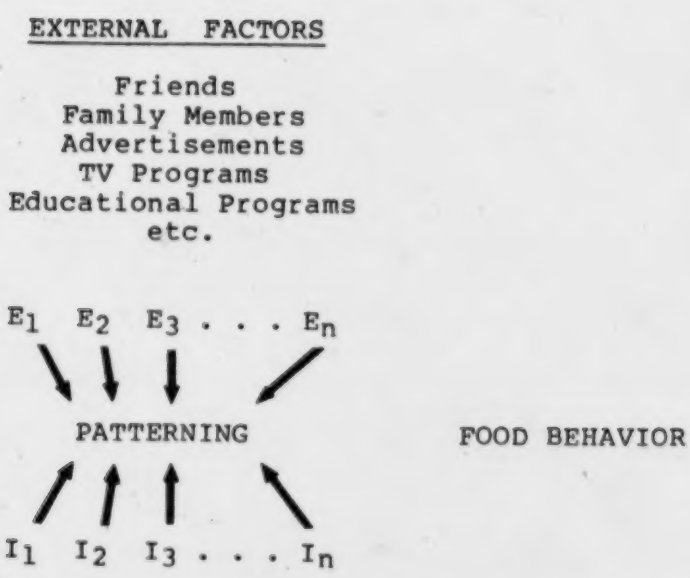

Figure 1. Frame of Reference of Observed Food Behavior

Reprinted from "Social Psychology of Food Faddism", by R. Schafer and E. Yetley, Journal of the American Dietetic Association, 1975, 66, 130. Reprinted by permission of the Journal of the American Dietetic Association.

of instability, individuals tend to look to persons who constitute their reference group, not to nutrition experts, for food information (Schafer & Yetley, 1975, p.130-131).

Adolescents are continually encountering situations which disrupt their structured patterns. This fact may have great implications for nutrition educators. Schafer and Yetley (1975, p.132) suggest that nutrition educators must consider the overall frame of reference that is affecting food behavior.

The sections which follow present the diversity of explanations of food habit development in general, as well as a review of the literature specifically related to adolescent food habits.

Physiological Perspective

Biological or physiological need for food has been studied by nutritionists from the point of view of nutrient adequacy. Most studies of dietary intake have been conducted with school-aged children or college students probably due to the accessibility of this population. The majority of the studies have been conducted on a small scale at the local level. Such studies include those by Trenholme and Milne (1963) in Ontario; Armstrong, Peckham, Templeton, Bodley, and

McLaren (1964) in Toronto; AuCoin, Haley, Rae, and Cole (1972) in Nova Scotia; Fetherston (1976) in Calgary; and Thompson and Schwartz (1977) in Vancouver. Two larger scale studies have been conducted, one in Canada (Nutrition Canada National Survey, 1973), and one in the United States (National Nutrition Survey, 1969). Both studies had sufficiently large samples to make the results generalizable at the national level. Most of these studies report inadequate intake of some nutrients which implies the need for improved food habits of most people in North America.

Regarding the physiological need for food, Venable (1957, p.601) said that the physical need for food, or hunger, is "a last resort reason for eating." He believes that although most nutrition education has emphasized food for health, health is the least influential of any factor in establishing food habits.

Sociocultural Perspective

Looking at food habits from a sociocultural point of view, Simoons stated that "any attempt at understanding the eating behavior of humans must reason with man's foodways -- the modes of feeling, thinking and behaving about food that are common to a cultural group" (Simoons, 1976, p.313). Most anthropologists and sociologists studying food habits agree that food customs were created

by geographic location, superstition, religious belief, social activities, economics, foreign influences, and technological advances of the particular group of people (Kowtaluk & Kopan, 1977; Lowenberg, Todhunter, Wilson, Savage, & Lubaski, 1979; Rozin, 1976). Gifft et al. (1972, p.31) comment that availability plays the primary role in determining food habits. The food must be physically present by some means before it can be eaten. Thus the geography, climate, economic position, and technical advances of a society exert a pronounced influence on food habits (Lowenberg et al., 1979).

Food is always culturally defined so that what is edible in one society may not be in another. Societal patterns influencing food habits include how food is acquired and stored, which foods are consumed, how foods are prepared, who prepares them, who eats them, with whom, when, how, and in what quantity (Fathauer, 1960, p.336).

In most societies food is the focus of emotional associations, a channel for interpersonal relations, for the communication of love, discrimination or disapproval (Mead, 1943). In this way food has symbolic meaning. For example, the sharing of food is a universal symbol of intimacy and acceptance. Most of the world's religions have rituals involving sacred symbolisims of food (Fathauer, 1960, p.337).

Needs Satisfaction Perspective

Another viewpoint from which food habits may be examined is that of needs satisfaction. Venable (1957, p.600) stated that some food habits are the "outgrowth of real or imagined needs." The imagined or psychologic needs are more powerful and complex than physical needs and often lie at the subconscious rather than the conscious level. Venable identified some psychologic needs influencing food habits as the need to be like others, the need for social approval, the need for attention and for acceptance. Kowtaluk & Kopan (1977, p.13) state that "people eat to meet some of their basic human needs, both physical and psychological. These include needs such as survival, security, the sense of belonging, self-esteem, aesthetic appreciation and adventure."

Gifft et al. (1972) and Lowenberg et al. (1979) have explained food habits by employing Maslow's theory of human motivation. Maslow classified all human needs into physiological needs (survival needs), and social needs. Maslow's hierarchy of needs has five levels:

1. the basic need of survival
2. need for security or safety
3. need for belonging
4. esteem or status needs
5. self-actualization or self-realization.

In applying this theory to food habits, both Gifft et al. (1972) and Lowenberg et al. (1979) observed that needs at the basic survival level must be met before individuals concern themselves with the meanings or uses of food at the social level. Food habits will change as an individual moves through the various levels. When an individual has enough food to satisfy basic hunger, and feels secure in being able to attain food in the future, that individual will begin to use food to promote sociability or belongingness. "Members of closed groups carefully guard their food habits to remain in a group" (Lowenberg et al., 1979, p.129). Once the belongingness need is met, food habits may be geared toward attaining status, and finally self-actualization. In this final stage the individual dares to be creative and innovative.

Availability and Acceptability Perspective

Food habits develop as a result of past experiences with the availability and the acceptability of foods (Gifft et al., 1972). By availability it is implied that a food "must be physically present, it must be economically feasible, and it must be selected for presentation by the person or persons who operate along the channel that brings food to the table" (Gifft et al., 1972, p.31). The physical presence of a food in the area is determined by geographical and climatic factors and

also by the nature of the production, marketing and distribution system. In Canada, technology has overcome many geographic or climatic restrictions, and distribution systems have become highly efficient, so that food from all over the world is available. In this case, the economic situation of a person or household may set the limits in determining what kinds of food will be available. Another limiting factor might be seasonal variations in availability and variances in demand which would restrict supply and distribution of foods

Lewin (1943) used the term "gatekeeper" to describe the person who makes the ultimate decision as to what foods will be made available in a household. The gatekeeper in a family is usually the mother, although other members of the household may influence her decisions. In a school setting the gatekeeper may be the business manager, cafeteria operator or any other person who decides what foods will be available in vending machines or cafeterias. Lewin described the psychological factors influencing the person who controls the channels by which food is made available. These factors may be classified as those "pertaining to the cognitive structure, or terms in which people think and speak about food, and those pertaining to their motivation, or the system of values behind their choice of food" (Lewin, 1943, p.40).

Gifft et al.'s second concept of factors influencing individual food habits is acceptability. Attitudes, values and beliefs of a particular culture form the frame of reference within which the acceptability of a food develops meaning. Most of the more important meanings can be related to security -- biological, emotional, or sociological in nature, or any combination of these (Gifft et al., 1972, p.34). The following paragraphs outline this notion of acceptability as a determinant of food habits.

The need for biological security from hunger, or fear of hunger, will motivate an individual to eat. In cases of severe hunger, food not normally considered acceptable will become food. Under normal circumstances, the safety of the food and the perceived benefits to health will influence the acceptability of food.

Beginning at a very early age, psychological or emotional security needs are met through food. In infancy we learn to associate food with the love and affection of a mother who feeds us. Later in life eating can become associated with a desire for attention and love and may even serve as a substitute satisfaction for these desires. Similarly, food may become an emotional weapon or crutch by relieving anxiety, tension, frustration, unhappiness, irritability, disappointment, loneliness, or boredom. Familar food may provide emotional security

especially if other kinds of security are threatened. Memories of past experiences with certain foods will influence the acceptability of a food.

The final dimension of acceptability of food is that of sociological security (Gifft et al., 1972). In all cultures, there are acceptable ways of eating, times of eating, places of eating, and acceptable foods to eat. The extent to which an individual complies with the standardized food-related behaviors or foodways of the culture, determines the degree of sociological security achieved. Religious beliefs will influence acceptability of foods and consequently our food habits. In virtually every culture, food has symbolic meaning in terms of religious beliefs. To the adherents of any religion, the prescriptions regarding eating practices have great influence on acceptability. Food taboos and superstitions also influence acceptability. Societal pressures may cause certain foods to become status symbols. This would motivate individuals to consume food products popular with the social class to which they aspire. The desire for acceptance and belonging in a group will similarly influence food habits. The need for sociological security will thus influence a person to consume foods acceptable to a particular culture.

Individual Differences Perspective

Individual differences affect food habits. Good and poor digestion, food allergies and idiosyncracies, the rate of metabolism, the degree of intelligence, the extent of the imagination, the effect of education in making the individual aware of the body's needs, and drives such as the desire to attain status will all combine to give an individual unique eating patterns (Lowenberg et al., 1979, p.122). Martin (1971, p.17) adds the dimension of sensory reactions to the taste of foods when discussing individual food habit formation. In a study of the food habits of college students, Wise (1974) concluded that food habits are affected by multiple factors which vary with individuals.

Family Influence Perspective

The influence of the family is another factor affecting the food habits of an individual. Stare and McWilliams state that individual food preferences develop as a result of the foods preferred by other family members, especially parents. Foods purchased and prepared in the home reflect parental attitudes as well as family incomes (Stare & McWilliams, 1973, p.33).

The shifting pattern of North American life from rural to urban resulted in changing values and goals for family life. Stare and McWilliams (1973, p.66) enumerated

several sociological trends in modern American society which may influence dietary patterns:

1. Increasing value placed on individual achievement of self-identity and individual goals with the result that families no longer follow traditional meal patterns.

2. Adjustment of family eating patterns to meet the job demands of both parents.

3. Increasing number of families in crisis, (i.e., divorce, separation) causing stress and resulting in a decreased desire to eat.

4. Acculturation of minorities accompanied by a paradoxical increased interest in cultural heritage and associated food habits.

5. Alarm over ecological imbalances and a trend toward natural foods away from the world of technology and science.

The influence of these trends has been described by Fine (1972) who believes that the complex structure of modern living tends to rule out the traditional pattern of three meals a day. Eating is an all-day activity with more emphasis on snacks than on traditional meals. The crumbling meal structure begins with little or no breakfast, as many as three of four snacks in the morning, a light lunch, no sit-down family dinner, (instead, everyone grabs a bite and takes off to various evening activities). Then comes "TV eating", followed by a

substantial snack at bedtime, and even raiding the refrigerator after bedtime. Although this pattern is not desirable, Fine believes that it does exist as a pattern which allows family life to go on (Fine, 1972, p.2). Family disorganization which leaves adolescents on their own with respect to eating, however, fosters poor eating habits. "The young people who eat most poorly are those who eat with their peers or alone; those who eat best, eat with their families" (Martin, 1971, p.270).

Causally related to this hectic pattern of eating, Parrish (1971, p.140) identified the following factors:

1. A decline in home food production and preparation.

2. A rise in popularity of consumption of convenience foods, especially snack foods. This is accompanied by the rise of snacking as a widespread food habit.

3. A rise in the percentage of food consumed away from home, especially at fast-food, quick service, drive-in restaurants.

4. A trend toward meal-skipping, particularly in teenagers.

5. A declining proportion of family income spent on food which has caused a decline in the time and interest devoted to food.

6. A decline in consumption of fresh fruit and vegetables caused by increased costs of these items.

7. An increased popularity of weight-loss diets and

health food fads.

Influence of Adolescent Sub-Culture on Food Habits

Extending beyond the individual, beyond family, beyond the social support network, is the culture or sub-culture from which the individual comes (Steuart, 1976, p.194). Broom and Selznick (1977, p.74) defined a sub-culture as "a pattern that is in significant respects distinctive, but that has important continuities with a host or dominant culture." A sub-culture may be based on occupation, residence, ethnic group, religion, social class, age, language, diet, or other variables.

James Coleman (1961) attributed the emergence of an adolescent sub-culture in our modern industrial society to the setting apart of children in schools for an ever longer period of time. The high school youth is

> Cut off from the rest of society, forced inward toward his own age group, made to carry out his whole social life with others his own age. With his fellows he comes to constitute a small society, one that has most of its important interactions within itself. (Coleman, 1961, p.3)

A separate sub-culture develops with attitudes and value systems that differ from adults. These value systems

affect food habits.

Steelman (1976, p.22) suggests that sub-cultural traits must be considered when attempts are made to change food habits, because nutrition programs that are effective in one sub-culture may not be effective in another. Since attitudes and values vary by sub-culture it is logical to conclude that these basic determinants of behavior will be related to food habits which also vary by sub-culture.

Food Habits of Adolescents

One of the very important developmental tasks of adolescents is the achievement of self-identity. "The path toward this goal leads to the need for establishing independence from parents, acceptance by friends, and the acquisition of a self-satisfying personal image" (Stare et al., 1973, p.209). All three of these factors have been found to be significant in determining the dietary patterns of teenagers.

The fact that the teenager is a snacker is well documented (Hampton, Huenemann, Shapiro, & Mitchell, 1967; Hinton, Eppright, Chadderdon, & Wolins, 1963; Huenemann et al., 1968; Leverton, 1968; Moomaw, 1978; Thomas & Call, 1973; Wharton, 1963). The Nutrition Canada Survey reported that approximately twenty-seven percent of the

caloric intake of adolescents comes from snacks (Nutrition Canada: Food Patterns Consumption Report, 1973, p.60). Matheson (1976, p.1) has defined snacks as "bite sized or individual portions of food usually eaten on the run or between meals". This may not be a negative statement since some researchers have found that snacks are not necessarily empty calorie; thus, snacks may provide a significant proportion of nutrients to the diet (Leverton, 1968; Thomas & Call, 1973). In addition, no relationship has been found between frequency of eating and overall quality of the diet, except that those eating less than three meals a day usually had much poorer diets (Hampton et al., 1967; Hinton et al., 1963). It has been found that teenagers frequently eat at least four or five times a day (Thompson, 1975).

The snack food preferences of adolescents were studied by Huenemann et al. (1968). These snack foods are listed in descending order of popularity for each sex in Table 1.

Everson commented on the fact that the quality of children's diets appears to decrease with age. "This difference seems to be a matter of the independence of the child, the number of meals he eats away from home, and his social habits" (Everson, 1960, p.17). Motivated by the desire for slenderness, teenage girls tend to reduce their food intake as they grow older. Because of the reduction in intake, the nutritive quality of the diet suffers.

Table 1. Snack Food Preferences Reported by Huenemann

Boys	Girls
cereal and bread	cake, pastry, cookies
cake, pastry, cookies	candy
soft drinks	fruit
milk	cereal and bread
fruit	soft drinks
eggs, meat, cheese	ice cream
ice cream	milk
candy	eggs, meat, cheese
potato chips	potato chips
vegetables	vegetables

Heavy teenage girls have especially poor diets because they are under the delusion that certain foods, notably milk and bread, are fattening. Because of this misinformation, they will increase consumption of meat, which in fact is higher in calories than milk or bread (McCaie, 1978, p.1).

Fetherston (1976), in studying the food consumption patterns of senior high school students, found the following factors to be associated with poor eating habits:

1. low academic achievement.
2. inadequate knowledge of nutrition.
3. patronage of school food facilities.
4. having a part-time job.

Between the ages of eight and twelve, Moomaw (1978) found that children begin to exercise more choice over

their food consumption patterns. They have more money to spend and begin to consume more meals and snacks away from home. Interestingly, girls have been found to snack more frequently than boys (Wharton, 1963). Hinton et al. (1963) found that the most common snack period is late afternoon and evening.

Spindler and Acker (1963) interviewed adolescents regarding their eating habits. Some of their answers included: "we are in such a hurry we do not have time to eat, our activities interfere with eating" (Spindler & Acker, 1963 p.229). Meals were seen to be of secondary importance if the teenager had an opportunity to be with the gang. Even though the adolescents interviewed thought that parents were responsible for their eating habits, they thought that being part of the teen group was more important. "We select what everyone else eats" (Spindler & Acker, 1963, p.230).

Stare et al. (1973) commented on the importance of the peer group as well. "Even when the interests of the group centre on activities far removed from eating, there is almost always some snacking included as part of the sociability" (Stare et al., 1973, p.209). When the group adopts certain foods or eating practices, individuals are strongly compelled to eat with the group regardless of their own personal preferences or appetite. The food consumed as snacks by teenagers in groups is often a

significant part of the day's intake.

The influence of urbanization and technological development on the rising popularity of "new" foods with teenagers has been discussed by Lee (1977, p.144). The reasons Lee listed for those so-called "new" foods becoming a major part of the diet of many adolescents were:

1. TV and radio advertising has influenced food habits since adolescents are prone to food fads.

2. Working parents have conditioned generations of children to "convenience foods" in canned, frozen or reconstituted forms.

3. Many young people themselves are at part-time jobs during the family dinner hour.

4. Young people leave home to establish independent residences much earlier than their parents did. Financial insecurity, career uncertainty and vascillating life styles create havoc with adolescent food habits.

5. Limited culinary skills, crowded schedules and lack of concern about nutrition make adolescents willing consumers of foods from fast-food establishments.

The tremendous preoccupation many teenagers, especially girls, have with the importance of achieving a slim body is a reflection of the population's emphasis on sexual attractiveness (Guthrie, 1979, p.477). Teenagers strive to achieve an image pleasing to themselves and to their peers because physical attractiveness is important

for entry into the peer group (Coleman, 1961, p.169). The foods an individual chooses to eat must not only satisfy hunger, but also be congruent with the individual's self-image (Krech, Crutchfield & Ballachey, 1963, p.83).

Mapes (1977, p.16) surveyed New York youths aged fourteen to eighteen years regarding their nutritional concerns. The top five concerns out of a list of twenty were:

1. Can you lose weight quickly without damaging health?
2. Is snacking bad?
3. Does diet affect acne?
4. Is alcohol high in calories?
5. Are organic foods healthier?

The fact that snacking appears second on the list of concerns reemphasizes the importance of snacking as a food habit of adolescents.

Most of the studies which have been done on adolescent eating habits have been approached from the perspective of evaluating dietary adequacy. These studies have almost unanimously agreed on the inadequacy of the adolescent diet. The Nutrition Canada Alberta Survey (1975, p.143) reported low nutrient intakes of Vitamin A, calcium, Vitamin D, and iron for girls aged ten to nineteen years, and low intakes of Vitamin D, and iron for boys in the same age group. Other studies done on adolescent intake in Canada include Trenholme and Milne (1963) who studied

2,436 grade nine students in Ontario and found that over fifty percent rated poorly on a seven-day food record. In addition, girls diets were found to be lower in quality than boys. Armstrong (1964) studying grade nine students in Toronto found that, of the eight thousand students who completed a general food-use survey, over half were low in intakes of fruit and vegetables. A high incidence of snacking was also reported. AuCoin et al. (1972) studied the intakes of 587 ten, thirteen, and fifteen year olds in Nova Scotia and found that fifty-four percent of the ten-year-olds had adequate diets, compared with forty-nine percent of the thirteen-year-olds, and only twenty-nine percent of the fifteen-year-olds.

Findings in a study of 366 grade eight students in Vancouver (Thompson et al., 1977) showed more encouraging results than AuCoin in that seventy-three percent of the students surveyed reported adequate diets. The only major food group which adolescents lacked in this study was milk products.

Findings in the United States are similar. The Ten-State Nutrition Survey (1969) reported that adolescents' diets were deficient in calories, iron, Vitamin A, and Vitamin C. Other American studies supporting this view include: Hampton et al. (1967); Schorr, Sanjur, and Erickson (1972); and Wharton (1963).

Other researchers have attempted to discover the

factors related to the inadequate intake of nutrients by adolescents. Some of the factors studied include the socioeconomic level of the family, the family size, mother's education and occupation, father's education and occupation, family relationships, age, sex, employment status, social participation level, knowledge of nutrition, self-image, and peer group values. These may be categorized into the areas of family background, individual differences, and peer group influence, and are discussed in the sections which follow.

Family Background

Breeling (1970), Hampton et al. (1967), Hinton et al. (1963), and Huenemann et al. (1968) all found that socio-economic status of the family influenced the quality of food intake - the higher the status, the better the dietary habits. Hendel, Burk, and Lund (1965) found that family income affected food habits, but Hodges and Krehl (1965) and Futrell, Kilgore, and Windham (1971) found no relationship. The size of the family was not found to be related to food habits by AuCoin et al. (1972), Sanjur (1971) or by Thompson (1976). The level of education of the mother has been shown to be strongly related to the dietary intake of her children (AuCoin et al., 1972; Futrell et al., 1971; Hendell et al., 1965; Schorr et

al.,1972). Sanjur (1971), however, found no relationship between the mother's educational level and her children's dietary intake. In the case of the father's educational level, both Hinton et al. (1963) and AuCoin et al. (1972) found a strong positive relationship. The employment status of the mother was found to be related to adolescent dietary practices by Schorr et al. (1972), but AuCoin et al. (1972) found no significant relationship. Father's occupational level has been positively related to food habits by Schorr et al. (1972) and Hinton et al. (1963). Congenial interaction of people living together as a family were found by Allen, Patterson, and Warren (1970) and Hinton et al. (1962, 1963) to affect dietary habits.

Individual Differences

The majority of researchers have found that girls have poorer diets than boys (Allen et al., 1970; Huenemann et al., 1968; Nutrition Canada, 1973; Schorr et al., 1972). AuCoin et al. (1972) and Thompson (1975), however, found no difference in the eating habits of either sex. The quality of the dietary intake appears to decrease with age (AuCoin et al., 1972; Thompson, 1975). Participation in social or leisure activities was not found to bear any relationship on food habits (Schorr et al., 1972; Thompson, 1975). Schorr et al. (1972) found no relationship between employment status of adolescents and

their food habits. Self-image of adolescents seems to have an important influence on their food habits, especially their concept of body weight. Huenemann et al. (1966) found that most adolescent girls want to lose weight while most boys want to gain. A knowledge of nutrition was found to improve the food habits of adolescents by Hinton et al. (1963), Kunkel and Hall (1958), and Mirenda (1966). Baker (1972) and Wise (1974), however, found that knowledge did not significantly improve food habits.

Peer Group

Spindler and Acker (1963) and Munns (1972) found that peer group values were more important in influencing food habits than parents. Spindler and Acker (1963) also found that activities that adolescents were involved in interfered with eating.

Appearance was rated as the most important factor affecting their food habits by the majority of teenagers (Dwyer, Feldman, and Mayer, 1967; Huenemann et al., 1966; Spindler & Acker, 1963). Health was found to be of secondary importance by Spindler and Acker (1963).

In summary, "food with man is not just food; it is the crossroads of emotion, religion, tradition and habit"

(Eppright, 1947, p.579). This chapter has elaborated on the development of food habits in general, and specifically those of adolescents. Adolescent food habits are especially characterized by frequent snacking. Factors related to the snacking habits of adolescents are contradictory and inconclusive. A clear understanding of these factors is important in developing relevant curricula.

CHAPTER III

RESEARCH METHODOLOGY

Design of Survey Instrument

Rationale

A questionnaire was determined to be the best method for collecting the required data. The interview method has been claimed to be more accurate when collecting data about children (Kerlinger, 1964, p.467) but this was not a practical alternative due to the required large sample size.

A review of the literature in the area of snacking habits did not reveal a suitable instrument to answer the research questions. Therefore, a questionnaire was developed specifically for this study. Questions were derived from the literature and from findings of previous studies on snacking and eating habits in general. A copy of the questionnaire is included as Appendix B (see page 113).

Structure

The instrument was designed to provide answers to the following questions:

1. How do high school students define a "snack"?

2. What are the characteristics of the snacking habits of high school students?

3. What is the relationship between the snacking habits of high school students and the selected demographic variables of grade, age, sex, weight status, employment status, registration in home economics courses, and disposable income?

4. What is the relationship between the snacking habits of high school students and the selected family background variables of household size, meal patterns of the household, gatekeeper of meals in the household, parent's influence on food habits, and interaction among family members?

5. What is the relationship between the snacking habits of high school students and the selected psychographic variables of peer group influence, meal skipping, and level of social activity?

Items on the questionnaire were initially structured as open-ended questions in order to determine the range of responses which might be possible. After the first pre-test, items were restructured to include the responses which students gave but with an "other" alternative still included in each question. After the second pre-test, all responses written into "other" were included, and the "other" response alternative was omitted from subsequent drafts.

In order to attain more reliable results, the length of the instrument and the design were of critical importance. A conscious effort was made to keep the amount of writing required of the respondent to a minimum. In this way, the amount of time taken to answer the questions would be reduced. For this reason, most questions were structured with either fixed-alternative or ranking responses.

Pretesting

Due to the researcher's accessibility to students enrolled in Social Studies 30, Math 23 and Food Science 10 at Louis St. Laurent High School in Edmonton, these students were used for pretesting the survey instrument. After each pretest, the students were asked to comment on the validity of the questions, the need for additional items, the ambiguity of the questions, and the ease of completing each question. Revisions or additions were made as necessary.

Validity

Validity is defined as the degree to which an instrument measures what it is supposed to measure (Kerlinger, 1965, p.444). For this study, validity was dependent on how adequately the instrument measured the snacking habits of high school students.

In order to increase the construct validity of the instrument, seven teachers in a home economics research methods education course at the University of Alberta, were asked to comment on the validity of each question. The suggestions of this panel of experts were incorporated into the instrument.

A second method of increasing the validity of the instrument was to incorporate suggestions made by students after pretesting. The rationale for using this method to increase validity was that the students themselves were deemed to be the best judges as to what factors might be affecting their snacking habits.

Reliability

Reliability of a measuring instrument refers to the extent to which similar findings would be obtained if repeated measures of the same instrument were administered (Kerlinger, 1965, p.429). In order to increase reliability, care was taken through pretesting, to reduce ambiguity of wording and to make each item as easily understood as possible.

Sample Selection

The population for the study consisted of the high

school students in the Edmonton Separate School System. A sample representative of this population was selected according to the following:

1. Four schools were randomly chosen from among the Edmonton Separate High Schools: Archbishop Macdonald, Archbishop O'Leary, Austin O'Brien, and St. Joseph's.

2. In order to obtain a representative cross-section of students, three kinds of classes, one from each grade level, were randomly selected from the schools. The three kinds of classes were academic, general, and optional. Classes selected were Food Science 10, Math 23, and Social Studies 30.

3. School principals were contacted to provide three afternoon classes in the subject areas and grade levels chosen.

The size of the final sample was 254. A breakdown of the sample according to school and class is found in Table 2.

Data Collection

In order to describe the snacking habits of high school students and to identify factors influencing these habits, a descriptive survey study was conducted. A questionnaire designed by the researcher was administered

to each class.

Table 2. Description of Sample According to School and Class Surveyed.

School	Class			
	Food Science 10	Math 23	Social Studies 30	Total
Archbishop O'Leary	14	20	28	62
Archbishop Macdonald	25	18	27	70
Austin O'Brien	13	20	35	68
St. Joseph's	20	18	16	54
Total	72	76	106	254

Permission to survey students was obtained from the Edmonton Separate School Board. Principals of the selected schools were then contacted to select mutually satisfactory dates for surveying. Principals contacted the teachers of the desired classes and arranged for entry into the classroom.

For expediency and to increase the reliability, the

instrument was administered by the researcher. Data was collected in the afternoons during 1979 04 17-26.

Data Analysis

All information obtained from the questionnaire was transferred to computer data files and subsequently analyzed. High school classes were the final sampling unit; however, the individual students became the units of analysis.

The SPSS subprogram FREQUENCIES was used to determine the basic distributional characteristics and to summarize the data gathered (Nie, Hull, Jenkins, Steinbrenner, and Bent, 1975).

Data Reduction

In some cases, more than one variable was used to gather data on a concept. In these cases, the data underwent a reduction process in order to facilitate subsequent statistical analysis. The initial 116 variables of the questionnaire were reduced to 93

variables. A description of all data reduction performed is included in the following section.

Weight and height responses were compared to recommended weight tables (see Appendix A) in order to assign an actual weight status to each individual. This was then compared to the perceived weight status reported in order to obtain the variable "weight status" (see Appendix C, Table 1). There were nine possible responses to the new variable.

The responses to questionnaire item 9 regarding number of people living in the household were categorized as small, medium and large according to relative size (see Appendix C, Table 2).

Responses to questionnaire item 11 gathering information on home economics registration were amalgamated into one variable according to amount and kind of courses taken. The final categories for this variable were: no home economics, some junior and some senior high, junior high only, and senior high only (see Appendix C, Table 3).

The grocery shopper (item 12) and the person who makes decisions as to what will be prepared for meals (item 13) was combined into one variable called "gatekeeper" (see Appendix C, table 4).

A variable called "meal patterns of the household" was developed from the response to item 14 of the

questionnaire. The categories of the new variable were: no meals eaten together, some meals eaten together and all meals eaten together (see Appendix C, Table 5).

Responses to item 19 regarding the amount of money spent on food per day were categorized into four response groups; no money spent, $0.01 to $1.00, $1.01 to $2.00, and over $2.00 (see Appendix C, Table 6).

The variable "degree of parent's influence on food habits" was developed by combining responses to items 38,40, 41, 42, and 45. Because item 42 was stated negatively in comparison to the other components of parental influence, responses to item 42 were coded in reverse order before combination with the other items. The categories of this new variable became: high influence, undecided, and low influence (see Appendix C, Table 7).

Items 39 and 44 were combined into the new variable "degree of congenial interaction among household members". The categories were: very congenial, undecided, and not congenial (see Appendix C, Table 8).

Peer group influence was obtained by combining items 27, 33, 34, 35, and 36 into one variable. Peer group influence was measured as high, undecided and low (see Appendix C, Table 9).

A new variable called "meal skipping" was derived from items 24, 25, and 26 which measured the frequency of

skipping breakfast, lunch or the evening meal. High, moderate, and low were the categories of this new variable (see Appendix C, Table 10).

Items 22, 23 and 49 were combined into the new variable "degree of interaction with other people" which was measured as high interaction and low interaction (see Appendix C, Table 11).

Responses to items 47 and 48 were combined to develop the new variable "participation in sports". Before combining the two variables, responses to item 47 were reversed in order to make it compatible with item 48 (i.e., both stated negatively towards participation in sports). This new variable was measured by high participation or low participation in sports (see Appendix C, Table 12).

The twelve new variables described in the preceding section were used in all data analysis.

Sample Description

In order to describe the sample, frequencies of response to each item relating to demographic, family background or psychographic variables were reported. In addition, the Chi-Square statistic with an associated probability level of 0.05 was used to determine whether a

systematic relationship existed between any of these variables. The SPSS subprogram CROSSTABS was used to compute and display contingency tables and to calculate the Chi-Square test of independence (Nie et al., 1975).

Research Question One: How do high school students define a "snack"? An open-ended question requesting the respondents to write down what the word "snack" means to them was devised. Key words in the responses were categorized and response frequencies were reported.

Research Question Two: What are the characteristics of the snacking habits of high school students? Descriptive statistics were reported in order to describe the snacking habits of the sample. Response frequencies to items 16, 17, 18, and 20 were subjected to a weighting technique to obtain ranks for analysis (see Appendix D). These statistics formed the basis for profiles of snacking habits.

Research Question Three: What is the relationship between the snacking habits of high school students and selected demographic variables? The following null hypothesis was

tested: There is no significant relationship between the snacking habits of high school students and:

grade

age

sex

weight status

employment status

registration in home economics courses

disposable income spent on food

For questionnaire items which were ranked (16, 17, 18, and 20), Spearman's rho was used to determine whether the rankings were similar across the categories of the demographic variables. The SPSS subprogram NONPAR CORR was used to compute Spearman correlation coefficients and associated levels of significance (Nie et al., 1975). A probability level of 0.05 was accepted.

For questionnaire items which were not ranked, the Chi-Square test of independence was used to test for relationships between snacking habits and demographic variables. A measure of association (Eta^2) was used to describe the strength of those relationships which proved statistically significant. Eta is an indication of how dissimilar the means on the dependent variable are within the categories of the independent variable. If the means are very different and the variances within the categories of the independent variable are small, Eta increases

toward a maximum value of 1. Eta^2 is the proportion of variance in the dependent variable explained by the independent variable. Eta^2 is often referred to as the correlation ratio (Mueller, Schuessler, & Costner, 1977, p. 236).

Research Question Four: What is the relationship between the snacking habits of high school students and selected family background variables? The following null hypothesis was tested: There is no significant relationship between the snacking habits of high school students and:

household size

gatekeeper of the meals in the household

meal patterns of the household

degree of congenial interaction among household members

degree of parent's influence on food habits

For questionnaire items which were ranked (16, 17, 18, and 20), Spearman's rho was used to determine whether the rankings were similar across the categories of the demographic variables. The SPSS subprogram NONPAR CORR was used to compute Spearman correlation coefficients and associated levels of significance (Nie et al., 1975). A probability level of 0.05 was accepted.

For questionnaire items which were not ranked, the Chi-Square test of independence was used to test for relationships between snacking habits and demographic variables. A measure of association (Eta^2) was used to describe the strength of those relationships which proved statistically significant.

Research Question Five: What is the relationship between the snacking habits of high school students and selected psychographic variables? The following null hypothesis was tested: There is no significant relationship between the snacking habits of high school students and:

peer group influence

meal skipping

social activity

For questionnaire items which were ranked (16, 17, 18, and 20), Spearman's rho was used to determine whether the rankings were similar across the categories of the demographic variables. The SPSS subprogram NONPAR CORR was used to compute Spearman correlation coefficients and associated levels of significance (Nie et al., 1975). A probability level of 0.05 was accepted.

For questionnaire items which were not ranked, the Chi-Square test of independence was used to test for relationships between snacking habits and demographic

variables. A measure of association (Eta^2) was used to describe the strength of those relationships which proved statistically significant.

CHAPTER IV

RESEARCH RESULTS

Sample Description

Complete descriptive statistics on the sample including demographic, family background, and psychographic information are presented in tabular form as Appendix E. A summary and discussion of those statistics is presented in the following section.

Demographic

The sample consisted of 254 students enrolled in one of three classes in four high schools of the Edmonton Separate School District (see Table 1, p.40). Information on the following demographic variables was collected from this sample: grade, age, sex, weight status, employment status, registration in home economics courses, disposable income spent on food.

The largest portion of the sample were in Grade 12 (49.4%, see Appendix E, Table 1) even though equal numbers of classes were sampled from all three grade levels. This

occurrence may be explained by the fact that older students may register in courses at the lower levels, therefore increasing the proportion of the sample at the Grade 12 level. The sample contained 45.3% males and 54.7% females (see Appendix E, Table 1). The modal response for age was 17 years with a range in age from 15 to 19 years (see Appendix E, Table 2).

When actual weight status was compared to perceived weight status for each individual, the greatest proportion of the total sample (50.3%) had a perception of their weight which was in concordance with their actual weight status (see Appendix E, Table 3). The largest single group (33.1% of the total sample) had the correct weight status and also perceived that they were the correct weight. The second largest group of people (19.9% of the total sample) were actually the correct weight but perceived they were overweight. This same general pattern was true when weight status was studied for the three grade levels and the five age levels. However, when weight status was analyzed by sex, a statistically significant relationship was observed (Chi-Square = 74.16, $p = 0.0000$). Of the females, 33.3% thought they were overweight when in fact they were the correct weight; 19.6% of females thought their weight was correct when they were actually underweight. Males who thought their weight was correct when they were actually overweight

constituted 16.8% of the male sample; and 13.3% of the males were actually the correct weight when they thought they were underweight. A greater proportion of females than males were underweight, whereas a greater proportion of males were overweight.

A statistically significant relationship (Chi-Square = 84.15, p= 0.0000) was also observed when the sample was grouped according to registration in home economics. Those who had taken junior high home economics only, or some junior and some senior high courses followed the general pattern of the total sample: the largest proportion of the sample perceived they were the correct weight and in fact they were the correct weight, and the second largest group were the correct weight but perceived they were overweight (see Appendix E, Table 4). A deviation from the general pattern was found for those who had never taken any home economics courses: 30.6% perceived their weight was correct when it was; 20.4% perceived they were the correct weight when in fact they were overweight; 20.4% perceived they were overweight when in fact this was true. For those who had taken only senior high home economics courses, the largest proportion (36.8%) perceived they were the correct weight and in fact were; the second largest group (23.7%) were actually the correct weight but thought they were underweight.

When comparing weight status to home economics

registration an interesting point emerges: 44.9% of those who had never taken home economics were actually overweight compared to only 14.4% of those who had taken some home economics (see Appendix E, Table 4). This would imply a relationship between weight status and home economics registration.

Some registration in home economics was reported by 80.2% of the sample (see Appendix E, Table 5). Of this, the largest group (35.6%) had taken junior high courses only. A statistically significant relationship (Chi-Square = 139.23, p = 0.0000) was observed when home economics registration was analyzed by sex. Of the females in the sample, 42.8% had taken some home economics courses at both the junior and senior high level. Less than 1% of the females had never taken any home economics courses. For males in the sample, the largest proportion (42.6% of the males) had never taken any home economics. For those males who had taken home economics, the senior high level was most common. Further description of home economics registration at each grade level may be found in Appendix E, Table 6.

Slightly more than half the total sample (58.1%) held part-time jobs (see Appendix E, Table 7). Of this, 55.4% of the females and 61.4% of the males in the sample held jobs. The proportion of the sample reporting part-time jobs increased from Grade 10 (8.7%) to Grade 12 (31.3%)

(see Appendix E, Table 8). The relationship between employment status and grade was statistically significant (Chi square = 6.06, p = 0.0484). No relationship was found between employment status and home economics registration.

Over half of the total sample (66.4%) spent less than $1.00 per day on food and 12.0% did not spend any money on food (see Appendix E, Table 9). A statistically significant relationship was observed between employment status and money spent on food per day (Chi-Square = 8.53, p = 0.0363). The majority of the sample reported spending $1.00 or less per day on food regardless of whether they held a part-time job or not. This was also true when the amount of money was analyzed by sex and grade but no statistical significance was found in these cases. Disagreement with the statement "I spend most of my money on snacks" was indicated by 77.5% of the total sample (see Appendix E, Table 10). No statistically significant relationship was found between responses to this statement and any of the demographic variables.

Family Background

Family background variables included in the study were: household size, gatekeeper of meals in the household, meal patterns of the household, congenial

interaction among members of the household, and parent's influence on food habits.

The majority of respondents (75.8%) reported living in households of from four to seven people (see Appendix E, Table 11). The modal response for household size was five people.

The gatekeeper of meals for 86.6% of the respondents was parents (see Appendix E, Table 12). A small group of 9.5% of the total sample indicated that, while parents did the grocery shopping, the decision as to what to eat for meals was their own. When gatekeeper was analyzed by household size, a statistically significant relationship (Chi-Square = 23.97, p = 0.0023) was observed. This response pattern was the same as that of the total sample, that is, parents were reported gatekeeper in a large majority of the cases (see Appendix E, Table 12). Meal patterns of the household were also statistically related to the gatekeeper (Chi-Square = 32.36, p = 0.0000). The people who ate some of the meals together as a household selected parents as the gatekeeper more often than those who did not eat any meals together (see Appendix E, Table 13). No statistically significant relationships were found between gatekeeper and sex, grade, employment status, weight status, or parent's influence on food habits.

Questions regarding the meal patterns of the household revealed the following: 85.4% of the total sample reported

that some meals per day were eaten together as a household (see Appendix E, Table 14). Of this, 81.9% designated the evening meal as the meal where all members of the household were usually present. No one claimed that all meals were eaten together, and 14.6% reported that no meals were eaten together as a household.

The size of the household was statistically related to the meal patterns of the household (Chi-Square = 9.65, p = 0.008). The proportion of small households claiming no meals were eaten together (28.6%) was greater than the proportion of medium (11.5%) or large households (5.3%) eating no meals together. Thus, the smaller the household, the greater the tendency not to eat meals together (see Appendix E, Table 15).

A statistically significant relationship was also found between meal patterns and the degree of congenial interaction among members of the household (Chi-Square = 13.21, p = 0.0014). Regardless of whether meals were eaten together or not, 75.2% of the sample reported a highly congenial relationship among household members (see Appendix E, Table 16). No statistically significant relationship was found when relating meal patterns to sex, grade, employment status, or parent's influence on food habits.

Only 10.2% of the total sample could be classified according to parent's influence on food habits. The

reason for this inability to classify 89.8% of the sample lies in the operational definition of parent's influence. That portion of the sample whose responses to parental influence showed no definite pattern of high or low influence (i.e., some responses indicated agreement and some indicated disagreement), were not classifiable. Of those which could be classified, 96.0% reported a low degree of parental influence on food habits (see Appendix E, Table 17). Parental influence was statistically related to sex (Chi-Square = 8.24, p = 0.0162), weight status (Chi-Square = 131.17, p = 0.0000), and size of household (Chi-Square = 10.11, p = 0.0386). Proportionally more females than males reported a low influence. None of the females acknowledged a high influence (see Appendix E, Table 17). A low degree of parental influence was reported regardless of weight status (see Appendix E, Table 18). As the size of the household increased, parental influence on food habits decreased. This would imply an inverse relationship between parental influence and size of household (see Appendix E, Table 19).

Psychographic

Psychographic variables studied included peer group influence, meal skipping and social activity level. A low

degree of peer group influence was reported by 10.6% of the sample (see Appendix E, Table 20). It was impossible to classify the remaining 89.4% of the sample according to the operational definition of peer group influence. Where no clear pattern of high or low influence emerged, the responses were termed "not classifiable". Meal patterns of the household were statistically related to peer group influence (Chi-Square = 4.24, p = 0.0396). No statistically significant relationships were found between peer group influence and sex, grade, weight status, home economics registration, parent's influence on food habits, or meal skipping.

Meals were seldom or never skipped by 31.6% of the sample (see Appendix E, Table 21). Most of the remainder of the sample was not classified by the definition of meal skipping. Home economics registration was statistically related to meal skipping (Chi-Square = 20.29, p = 0.0162). Those who had never taken any home economics courses reported the lowest proportion of meal skippers, and those who took only senior high reported the highest proportion.

Meal patterns of the household were also statistically related to meal skipping (Chi-Square = 25.71, p = 0.0000). A larger proportion of those who eat some meals together indicated a low incidence of meal skipping, than those who do not eat meals together (see Appendix E, Table

22).

No statistically significant relationships were found between meal skipping and sex, grade, weight status, employment status, parent's influence on food habits, or level of social activity.

Level of social activity was comprised of three components: interaction with others, participation in sports, and involvement in extra-curricular activities. Because respondent's answer patterns did not fit the categories used to operationally define interaction with others, 43.7% of the sample were not classified. However, an equal proportion of the sample (43.7%) did indicate a high level of interaction (see Appendix E, Table 23). A high level of participation in sports was reported by 59.8% of the sample (see Appendix E, Table 24). The modal response for involvement in extra-curricular activities was "seldom". The distribution of scores was spread relatively equally among the response alternatives (see Appendix E, Table 25).

Research Question One

"How do high school students define a snack?"

Of the 249 people who answered item 15 of the questionnaire, all of their responses related to the concept of eating. Generally their responses could be categorized by: eating when, eating why, eating how much, and eating what.

In Appendix F, the key words from the responses were categorized into groups according to the main idea presented by the response, and the response frequencies were indicated. Respondents frequently included more than one concept in their definition of a snack. Thus the total number of responses was greater that the total sample size, and the percentage of the total sample reported was greater than 100%.

A majority of the people (59.1%) defined the word "snack" by referring to when it was eaten. "Eating between meals" was the phrase most respondents used to describe a snack. The reason for snacking, the second most common category of response, was indicated by 53.5% of the sample. The most frequent reasons given for snacking were to "satisfy hunger" and to "fill the gap until the next meal". Only 4.0% of the sample indicated that a snack was eaten in place of a meal. The nature of the food accounted for 31.3% of the responses. The main descriptions of what the food was like were "non-nutritious junk foods" and "favorite foods". How much was eaten constituted the last group (29.9%) of

responses. "Eating a small amount" was indicated by 26.7% of the sample, while 2.4% felt that snacking meant "eating a lot".

When all the responses were considered together as one group, the four most common definitions of a snack were:

1. eating between meals (59.1% of total sample)
2. eating a small amount (26.7% of total sample)
3. eating to satisfy hunger (18.6% of total sample
4. eating to fill the gap between meals (17.0% of the total sample).

Based on this response, a definition of snack for the sample could be formulated as: eating a small amount of food in between meals to satisfy hunger or to fill the gap until the next meal.

Research Question Two

"What are the characteristics of the snacking habits of high school students?"

In order to describe the snacking habits of high school students, information was collected on the following:

1. snack food preference and consumption frequencies

2. time of day and circumstances of snack consumption
3. location of snacking and relative amount of money spent at these locations
4. companionship when snacking
5. frequency of snacking.

Responses to item 18 of the questionnaire, requesting respondents to indicate frequency of use for each snack food, were grouped into four categories according to the modal response. These categories were: high usage (eaten very often), moderate usage (eaten fairly often), low usage (eaten seldom), and never eaten. Foods which showed high usage were fruit, milk, fruit juice, bread/toast, and sandwich. Foods for which the modal response was "never", included pumpkin seeds, yogurt, cereal, chocolate milk, malted milk, raisins, pretzels, and diet soft drinks. Foods which fell into the other categories are listed in Appendix G, Table 1.

In order to compare the overall rank of each food based on frequency of use, a ranking technique was applied to the responses to item 18. The resulting top ten foods in order of use from highest to lowest are listed in Table 3. The overall rank for all snack foods may be found in Appendix G, Table 1.

Snack food preferences were further analyzed by

Table 3. Observed Snack Food Preferences

fruit
milk
fruit juice
bread/toast
sandwich
cheese
raw vegetables
regular pop
cold meats
cookies

grouping them according to nutritional and dental content. Alberta Education studied the foods which were available to students in schools and categorized them into four groups. These groups were:

1. good dental and good nutritional snacks
2. poor dental but good nutritional snacks
3. good dental but poor nutritional snacks
4. poor dental and poor nutritional snacks

(Alberta Education, 1977, p. 1).

Snack foods were then ranked within each of these categories (see Appendix G, Table 1). Category 1, good dental and good nutritional, contained the foods which received the highest frequency of use. Category 1 also contained eight of the top ten overall ranked foods. Category 4, poor dental and poor nutritional, contained the other two foods in the top ten overall ranks.

The responses to questionnaire items 28 and 29 regarding making up snack foods from scratch or consuming snacks that need no additional preparation appear to be contradictory. A majority of the sample (54.3%) reported that they usually make up their snacks by putting various foods together (see Appendix G, Table 2). Again a majority (66.1%) reported that they snack on foods that need no additional preparation. The contradictory nature of these responses render them unreliable and therefore not useful to further analysis. Most of the sample (56.9%) disagreed with item 30 of the questionnaire which stated "In general I do not like snack foods that are ready-to-eat out of a box or bag".

The most popular snack time reported by the sample was after lunch but before the evening meal, followed closely by the second most popular time of after the evening meal but before bedtime. Before breakfast was definitely not a popular choice of snack time since it was chosen as the least often snack time by 94.7% of the sample (see Appendix G, Table 3).

Questionnaire items 31, 52, 54, and 55 dealt with circumstances of snacking. Most of the respondents agreed that they looked for a snack as soon as they got home from school and that they usually snacked while watching television. Most respondents disagreed that they usually snacked while doing homework (item 52). No clear pattern

of response was found for item 54, since approximately the same proportion of the sample agreed as disagreed that when they snacked they were usually out with friends or on a date (see Appendix G, Table 2).

When they snacked, most respondents indicated that they were at home (item 51). There was general disagreement with snacking at school (item 53) and snacking at work (item 56), (see Appendix G, Table 2). When they did snack away from home, most of their money was spent in fast food outlets. When various outlets (item 20 of the questionnaire) were ranked according to amount of money spent there, the school cafeteria ranked second and the school vending machines ranked sixth out of eight locations (see Appendix G, Table 4).

The majority of the respondents in the study most often snacked by themselves. In answer to item 16 of the questionnaire, an almost equal proportion of the sample ranked a friend as their most common snacking companion. Siblings were ranked third, and parents were chosen as the least frequent snack companions (see Appendix G, Table 5). This pattern was apparent in responses to items 32 and 50 as well. Most respondents felt that if they were all alone for an evening they would probably eat something, and that they usually had a snack when they were out with friends (see Appendix G, Table 2).

The largest proportion of people (43.3%) agreed that

snacking was a major part of their food intake, and an even larger proportion (50.2%) thought that they snacked a lot (see Appendix G, Table 2, items 37 and 46).

Research Question Three

"What is the relationship between the snacking habits of high school students and selected demographic variables?"

The snacking habits of the total sample were described in response to Research Question Two (see p. 62). In the section which follows, these snacking habits were analyzed according to the demographic variables of grade, age, sex, weight status, employment status, registration in home economics courses, and disposable income spent on food. Statistically significant relationships were described when they were observed.

When snack food preferences (questionnaire item 18) were analyzed by demographic variables, the correlation with the total sample was very high. No statistically significant differences were found between the rank of the total snack food list by any of the demographic descriptors, and the rank of the snack food list by the total sample (see Appendix H, Table 1). This was also

true when comparing the ranks within each of the snack food categories for each demographic variable (see Appendix H, Table 2, 3, 4, and 5). An exception was found for two categories of weight status. A statistically significant low correlation was observed for those who were actually overweight but perceived they were underweight, and those who were actually underweight but perceived they were overweight. However, because only 1.6% of the sample were classified in these two categories, these results were deemed unreliable. No statistically significant relationship was found between general type of snack food preferred (questionnaire items 28, 29, and 30) and any of the demographic variables. Thus the snack food preferences of high school students in the sample were basically the same regardless of changes in the demographic variables studied.

No statistically significant difference was observed between the rank of snack time by the total sample, and the rank of snack time by any of the demographic variables. The correlation between the total sample, and each demographic descriptor was very high in the majority of the cases (see Appendix H, Table 6). Therefore, demographic variables cannot be used to determine the time of day at which high school students snack.

Questionnaire items 31, 52 and 55, which dealt with the circumstances of snacking, were related to the

demographic variable of disposable income spent on food. A statistically significant relationship was observed between the relative amount of money spent on snacks and snacking after school (Chi-Square = 28.99, p = 0.0240), snacking while doing homework (Chi-Square = 28.21, p = 0.0298), and snacking while watching television (Chi-Square = 27.13, p = 0.0400). An inverse relationship occurred between the relative amount of money spent on snacks and snacking after school (see Appendix H, Table 7). A majority of the sample (53.6%) snacked after school but did not spend most of their money on snacks. This relationship was relatively weak in that the proportion of variance in "snacking after school" explained by the demographic variable, "spending most of their money on snacks", was low (Eta^2 = 0.027). An inverse relationship was also observed between the relative amount of money spent on snacks and snacking while watching television. A majority (57.0% of the sample) snacked while watching television but did not spend most of their money on snacks (see Appendix H, Table 8). The strength of this relationship was also weak, since the proportion of variance in "snacking while watching television" accounted for by "spending most of their money on snacks" was low (Eta^2 = 0.033). The relationship between the amount of money spent on snacks and snacking while doing homework was direct, since the largest proportion of the

total sample (42.0%) did not snack while doing homework and did not spend most of their money on snacks (see Appendix H, Table 9). Once again, however, a relatively weak relationship was observed ($Eta^2 = 0.037$).

Questionnaire item 54, which dealt with snacking with friends or when out on a date, was statistically related to average amount of money spent on food (Chi-Square = 26.93, p = 0.0079). Although the majority of the sample spent from $0.01 to $1.00 on food, approximately the same proportion agreed as disagreed with item 54 (see Appendix H, Table 10). The relationship between these two variables was relatively weak ($Eta^2 = 0.037$).

When the rank orders of snack location for each demographic variable were compared to the rank of snack location for the total sample, the correlation was very high. No statistically significant differences were observed between the rank by the total sample and any of the demographic descriptors (see Appendix H, Table 11). The snacking location of high school students is thus basically the same regardless of changes in the demographic variables.

Snacking at home, measured by questionnaire item 51, was related to the amount of money spent on food per day (Chi-Square = 27.85, p = 0.0058). The largest proportion of the sample (37.3%) spent from $0.01 to $1.00 on food and usually snacked at home (see Appendix H, Table 12).

The statistical strength of this association was low (Eta^2 = 0.076). Snacking at home was also related to age (Chi-Square = 27.19, p = 0.0394) and grade (Chi-Square = 22.85, p = 0.0036). Regardless of age, there was high agreement with snacking at home (see Appendix H, Table 13). The strength of this relationship was relatively low however (Eta^2 = 0.036). The relationship between grade and snacking at home was also low (Eta^2 = 0.057). Once again, agreement with snacking at home occurred regardless of grade (see Appendix H, Table 14).

A relatively weak relationship was found between snacking at school (questionnaire item 53) and the amount of money spent on food (Chi-Square = 28.06, p = 0.0054, Eta^2 = 0.079). The majority of the sample disagreed that they usually snacked at school regardless of the amount of money they spent on food per day (see Appendix H, Table 15). Although significant, the relationship between "snacking at school" and "spending most of my money on food" was also weak (Chi-Square = 37.57, p = 0.0017, Eta^2 = 0.079). Most people disagreed with snacking at school and with spending most of their money on snacks (see Appendix H, Table 16).

Snacking at work (questionnaire item 56) was related to sex, employment status, and spending money on snacks. The relationship between sex and snacking at work was relatively weak (Chi-Square = 14.79, p = 0.0052, Eta^2 =

0.053), with both males and females disagreeing with item 56 (see Appendix H, Table 17). Of those who held a part-time job , the majority did not snack at work (see Appendix H, Table 18). The strength of this relationship was weak ((Chi-Square = 30.14, p = 0.0000, Eta^2 = 0.118). The largest proportion of the sample did not snack at work and did not spend most of their money on snacks (see Appendix H, Table 19). This relationship was also weak (Chi-Square = 36.84, p = 0.0022, Eta^2 = 0.086).

The snack companion did not vary when the sample was grouped according to demographic variables. No statistically significant differences were found when ranks of snack companion (questionnaire item 16) were compared by demographic descriptors, and the correlation with the total sample was very high (see Appendix H, Table 20). "Self" was the most common snack companion reported by the majority of the sample regardless of demographic variation. Snacking when alone for an evening was related to sex (Chi-Square = 16.68, p = 0.0023). Although the relationship was weak (Eta^2 = 0.055), both males and females indicated that they would usually eat something if all alone for the evening (see Appendix H, Table 21).

The amount of money spent on food per day was related to "snacking when out with friends" (questionnaire item 50). The largest proportion of the sample agreed that they snacked when out with friends and they usually spent

from $0.01 to $1.00 (see Appendix H, Table 22). Although statistically significant, the strength of the relationship was not strong (Chi-Square = 27.55, p = 0.0064, Eta^2 = 0.046).

Snacking a lot (questionnaire item 46) was statistically related to the demographic variables of age (Chi-Square = 37.02, p = 0.0021), and "spending most of my money on snacks" (Chi-Square = 50.93, p = 0.0000). The majority of those in grade 10 and grade 12 agreed that they snacked a lot. A slightly larger proportion of those in grade 11, however, disagreed that they snacked a lot (see Appendix H, Table 23). This relationship between grade and item 46 was not strong (Eta^2 = 0.027). When "snacking a lot" was analyzed by age, 15- and 18-year-olds agreed that they snacked a lot (see Appendix H, Table 24). For 16- and 17-year-olds, the proportion agreeing was almost the same as those disagreeing. A low measure of association (Eta^2 = 0.026) indicated a weak relationship between age and "snacking a lot". A weak relationship also occurred between "snacking a lot" and "spending most of my money on snacks" (Chi-Square = 50.93, p = 0.0000, Eta^2 = 0.097). An almost equal proportion of the sample agreed as disagreed with "snacking a lot", although the majority disagreed that they spent most of their money on snacks (see Appendix H, Table 25).

When snacking as a major part of food intake

(questionnaire item 37) was analyzed by "spending most of my money on snacks", a weak relationship was observed (Chi-Square = 34.27, p = 0.005, Eta^2 = 0.037). Approximately the same proportion of the sample agreed as disagreed that snacking was a major part of their food intake, even though the majority disagreed that they spent most of their money on snacks (see Appendix H, Table 26).

Research Question Four

"What is the relationship between the snacking habits of high school students and selected family background variables?"

Family background variables of household size, gatekeeper of meals in the household, meal patterns of the household, parent's influence on food habits, and congenial interaction among household members were analyzed by the snacking habits described in response to Research Question Two (see p. 62).

A high correlation was observed between the rank of

snack food preferences by the total sample and the rank of snack food preferences by each category of the family background variables (see Appendix I, Table 1). However, two exceptions were noted. A category of gatekeeper (parents/brother,sister) reported a significant low correlation, but this category contained only 1.6% of the total sample rendering the results unreliable. A similar situation occurred with the "high" category of parent's influence on food habits. Although a statistically significant correlation was observed, the results were unreliable because the category contained only 0.4% of the total sample.

A high correlation for rank of snack food preferences was also found when each of the four snack food categories were analyzed by the family background variables (see Appendix I, Tables 2, 3, 4, and 5). Thus, the snack food preferences of the high school students sampled were similar irrespective of family background.

The family background variable of "gatekeeper" was related to the snacking habit measured by "I do not like snack foods that are ready-to-eat out of a box or bag" (questionnaire item 30). Although statistically significant, the relationship was relatively weak (Chi-Square = 44.70, $p = 0.0002$, $Eta^2 = 0.070$). The majority of the sample designated parents as the gatekeeper of the meals and expressed disagreement with

item 30 ((see Appendix I, Table 6).

No statistically significant differences were noted between the rank of snack time by the total sample and the rank of snack time by any of the family background variables. A high correlation with the total sample was observed for most of the family background variables (see Appendix I, Table 7). The time of day of snacking was thus not influenced by any of the family background descriptors studied.

Snacking while doing homework, a circumstance of snacking measured by questionnaire item 52, was related to the family background variable of congenial interaction among household members (Chi-Square = 17.85, $p = 0.0224$, $Eta^2 = 0.026$). The largest proportion of the sample did not snack while doing homework and described the interaction among household members as "very congenial" (see Appendix I, Table 8).

When the rank of snack location for the total sample was compared to the rank of snack location for each family background variable, no statistically significant differences were observed. The correlation with the rank by the total sample was very high for most categories of the family background descriptors (see Appendix I, Table 9). Regardless of family background the snack location was basically the same.

Snacking at work (questionnaire item 56) was related

to the family background variable of meal patterns of the household (Chi-Square = 9.60, p = 0.0478). Disagreement with snacking at work occurred regardless of the number of meals which were eaten together as a household group (see Appendix I, Table 10). The calculated strength of this relationship was relatively weak however (Eta^2 = 0.023).

No statistically significant differences were obtained between how the total sample ranked snack companion (questionnaire item 16) and how any of the categories of family background variables ranked snack companion (see Appendix I, Table 11). Thus, the snacking companion chosen by the sampled high school students did not vary according to any of the family background variables studied.

Frequency of snacking as measured by "I think snacking is a major part of my food intake", was statistically related to meal patterns of the household (Chi-Square = 19.41, p = 0.0007) and to gatekeeper of the meals of the household (Chi-Square = 26.33, p = 0.0495). Although the majority of the sample reported eating some meals together, approximately the same proportion agreed as disagreed that snacking was a major part of their intake (see Appendix I, Table 12). The strength of this relationship was relatively low however (Eta^2 = 0.025). A relatively weak relationship (Eta^2 = 0.021) was also observed between gatekeeper and "snacking as a major part

of food intake". The majority of the sample indicated that parents were the gatekeepers, but approximately the same proportion of the sample agreed as disagreed that snacking was a major part of their intake (see Appendix I, Table 13).

Research Question Five

"What is the relationship between the snacking habits of high school students and selected psychographic variables?"

The snacking habits described in Research Question Two (see p. 62) were analyzed by the psychographic variables of peer group influence, meal skipping, and level of social activity. Statistically significant relationships were described when they were observed.

The rank order of snack food consumption frequency (questionnaire item 18) was compared between the total sample and each psychographic variable, and no statistically significant differences were found. The correlation between each psychographic descriptor and the total sample was very high in most instances (see Appendix

J, Table 1). A high correlation was also found between the rank of each of the four food categories by the total sample and the ranks by each psychographic variable (see Appendix J, Tables 2, 3, 4, and 5). The psychographic variables included in this study can, therefore, not be used to predict differences in snack food consumption from the total sample.

No statistically significant differences were observed between the rank of snack time by the total sample and the rank of snack time by any of the psychographic descriptors (see Appendix J, Table 6). The most popular snack time was "after lunch but before the evening meal" regardless in changes in the psychographic variables studied.

Of that portion of the sample which could be classified according to the psychographic variable of meal skipping, the majority disagreed with snacking while doing homework. Although statistically significant, the relationship was not strong (Chi-Square = 26.07, $p = 0.0105$, $Eta^2 = 0.025$). It is interesting to note that those who reported that they did not skip meals very often disagreed that they snacked while doing homework; but those who reported a high frequency of meal skipping agreed with snacking while they did their homework (see Appendix J, Table 7).

For each category of the psychographic variables, the rank order of snack location (measured by the amount of

money spent at various outlets) was not significantly different from the total sample. The rank order correlation of snack location between each category of psychographic variable and the total sample was very high in most cases (see Appendix J, Table 8). A relatively weak relationship was observed between level social activity, as measured by interaction with others, and "snacking at home" (Chi-Square = 18.13, p = 0.0203, Eta^2 = 0.057). The majority of the sample agreed with "when I snack I am usually at home" regardless of level of interaction with other people (see Appendix J, Table 9). The strength of the relationship between level of social activity, as measured by "participation in sports", and "snacking at work", was relatively weak (Chi-Square = 17.32, p = 0.0270, Eta^2 = 0.027). The largest proportion of the sample disagreed with snacking at work regardless of sports participation (see Appendix J, Table 10).

No statistically significant differences were observed between the rank of snack companion by the total sample and the rank of snack companion by any of the psychographic variables (see Appendix J, Table 11). The psychographic variables in this study did not influence the choice of snack companion. A relatively weak relationship was noted between the psychographic variable of social activity, as measured by involvement in

extra-curricular activities, and "snacking when out with friends" (Chi-Square = 25.49, p = 0.0127, Eta^2 = 0.003). Regardless of level of involvement in extra-curricular activities the majority of the sample agreed with snacking when out with friends (see Appendix J, Table 12).

Questionnaire items 37 and 46, which measured frequency of snacking, were not related to any of the psychographic variables.

Chapter V

DISCUSSION OF RESULTS

The circumstances surrounding adolescent snacking are not clearly evident, and the reasons for snacking are contradictory and inconclusive. This study investigated the snacking habits and some of the demographic, family background, and psychographic factors related to the snacking habits of adolescents, in order to provide a basis on which curriculum decisions for adolescent nutrition education could be made. The discussion of research results which follows is organized into the following sections: sample description, snack definition, and snacking habits.

Sample Description

Demographic

The demographic variables of weight status, employment status, home economics registration, and disposable income spent on food yielded some interesting results. Contrary

to popular opinion regarding the weight status of teenagers, most of the students in the sample (60.2%) were the correct weight. Of the remainder of the sample, approximately the same proportion were overweight as underweight. In addition most of the students perceived their weight status correctly regardless of whether they were overweight, underweight or the correct weight.

A difference was observed between male and female perceptions of their weight status. If females misjudged their weight status, they displayed a tendency toward thinking they were overweight, while males tended to perceive that they were underweight. These data support the findings of Huenemann et al. (1966) who found that the majority of girls want to lose weight while most boys want to gain weight. McCaie (1978) and Guthrie (1979) suggested that the reason for this phenomena related to girls' desire for slenderness and boys' desire to achieve athletic prowess. In contradiction to their perceived weight status, more males than females in the sample were overweight and more females than males were underweight. This finding is understandable if adolescents are eating in accordance with their desired self-image.

Students who had not taken any home economics courses exhibited the greatest tendency to be overweight. Although not as striking, the same observation was made of those who had taken only senior high home economics

courses. A possible explanation of this finding is that overweight students may avoid taking food science courses because they believe that taking these courses will cause them to gain more weight because of the eating aspect of the courses. Another interpretation may be that overweight students wish to avoid discussing their problem and therefore do not register for food science where they know weight problems will be discussed. It must be kept in mind, however, that the majority of the sample reporting no home economics or senior high only were male, and that more males than females were actually overweight.

A substantial proportion of the sample (35.6%) reported taking junior high home economics courses only. Although junior high home economics is a required course for most females, a decreased registration of 45.7% of females was observed between junior and senior high. The fact that these students did not take senior high home economics may be due to timetabling conflicts with other senior high school courses, inability to fit food science (an option) into a required academic program, or a lack of interest in taking further courses at the senior high level.

The fact that a large proportion of high school students held part-time jobs emphasizes the increasing degree of independence adolescents are striving for. Considering that the majority of the students held jobs,

the amount of money spent on food per day was surprisingly low (less than $1.00 per day). The money earned is obviously being spent elsewhere.

Family Background

The family background variables of household size, gatekeeper of meals, meal patterns of the household, congenial interaction among members of the household, and parents' influence on food habits were also used to describe the sample.

The gatekeeper of meals in the household for the large majority of students was "parents". It is interesting to note that this pattern has not changed over the last few decades in spite of changes in American lifestyle described by Parrish (1971) and by Stare and McWilliams (1973). In a study done in 1943, Lewin found that parents were the gatekeepers. Similarly, Spindler and Acker in 1963, discovered that teens agreed that parents, especially the mother, should have the prime responsibility for meals. Those who did not designate parents as gatekeeper may have come from households which did not contain both parents (i.e., adolescents living with older siblings or alone, or single parent families).

Martin (1971, p.270) commenting on adolescent food

habits stated that "those who eat best eat with their families." An encouraging finding of this study was the fact that at least some meals were eaten together as a household by a large majority of the students even though students in small households had a greater tendency to eat alone. Those who ate alone exhibited a tendency toward meal skipping. In view of the busy schedules characteristic of most households today, it is not surprising that breakfast and lunch were not eaten together and that, after a busy day, most households gathered together to share the evening meal. Martin continued with her comment: "the young people who eat most poorly are those who eat with their peers or alone" (1971, p.270). Since breakfast and lunch were found to be the meals eaten alone or with peers, adult companionship or supervision should be encouraged during these meals. This should present no major problem in households since the majority reported a high degree of congenial interaction among household members.

Even though parents were found to be the gatekeepers of meals in the household, a low degree of parental influence on food habits was observed. This finding corroborates that of Spindler and Acker (1963) who found that while teenagers thought parents should be primarily responsible for preparing meals, the peer group was more influential in deciding what they chose to eat.

A similar kind of contradiction may be seen between parental influence, size of household and meal patterns. In this study the larger the household, the less the parental influence but the greater the tendency for household members to eat meals together. In larger households, parental responsibility may be transferred to older children.

Psychographic

The psychographic variables of peer group influence, meal skipping and level of social activity were included in this study.

The finding of low peer group influence disagrees with other studies (Munns, 1972; Spindler & Acker, 1963; Stare et al., 1973) which reported a high degree of peer group influence. There are two possible explanations for this. One reason may be due to the fact that 89.4% of the sample was not classified according to peer group influence. No allowances were made for mixed responses (i.e., some responses indicating low and some indicating high influence of peer group). This eliminated the possibility of finding any "moderate" degree of influence. Only those with strong feelings towards the items chosen to measure peer group influence were classified.

A second explanation for the low peer group influence reported in this study may be that the concept of "peer group influence" carries negative connotations for adolescents. It seems that the emphasis in today's society is on individuality, so that the socially accepted response to the questions measuring peer group influence would be "low influence". The method chosen to measure this concept may, therefore, have been inappropriate giving inaccurate, unreliable results.

When measured according to the psychographic variable of meal skipping, 66.8% of the sample were not classified due to the method chosen to classify the responses to meal skipping. Parrish (1971) reported a high incidence of meal skipping. In the present study, a low incidence of meal skipping was reported by the 35.2% of the sample whose responses could be classified. Breakfast was the meal most often skipped and the evening meal was skipped least often. This finding disagrees with Huenemann et al. (1968) who found that lunch was the meal most often skipped. All four of the schools surveyed had large cafeterias which served hot lunches, therefore, this may have influenced the findings. The teenagers in Huenemann's study claimed to substitute other activities for eating during their lunch period.

Those students who did not take home economics reported a lower frequency of meal skipping than the rest

of the sample. Those students who took senior high home economics courses only reported the highest incidence of meal skipping while those who have never taken any home economics skipped the fewest meals. This would imply that either there may be something unique about the personalities of the students who choose to take home economics, or that there may be something inherent in the home economics courses which predisposes students towards skipping meals. Examples of this second implication might be: breakfast skippers who have a food science class at the beginning of the day may plan on eating what they prepare in class, or those who eat food prepared during a food science class directly before lunch may skip lunch. If this is in fact the reason for meal skipping there is less cause for concern since meals would be eaten at a different time rather than skipped.

Even though extra-curricular involvement was only moderate, the students were relatively active socially as indicated by a high level of interaction with others and high participation in sports. These findings support those of Spindler and Acker (1963) who found that teenagers were sometimes too busy to eat.

Snack Definition

In this study, the definition of snack which emerged was "eating a small amount of food in between meals to satisfy hunger or to fill the gap until the next meal." This is very closely related to the definition given by Matheson (1976, p.1): "bite sized or individual portions of food usually eaten on the run or between meals."

Venable (1957) claimed that hunger was one of the least important reasons for eating. In the definition which emerged from this study, however, hunger was the most important reason for snacking. Thus, the reasons for snacking appear to differ from the reasons for eating meals which according to Gifft et al. (1972), are more closely tied to social and psychological factors than to the biological factor of hunger.

Snacking Habits

In a study of the eating practices of teenagers, Huenemann et al. (1968) observed a difference in the kinds of snacks consumed by males and females. These snack foods are listed in descending order of popularity for each sex in Table 1 (see page 28).

In the present study, no significant differences were observed in the snack food preferences of boys and girls. The list of snack foods was also different from that

reported by Huenemann et al. The snack foods found popular in the present study are listed in descending order of consumption frequency in Table 3 (see page 65). Most of the snack foods consumed are those readily available at home versus at fast food outlets.

The snack foods found to be popular in the present study are of better quality, from both a nutritional and a dental point of view, than the snack foods found popular by Huenemann et al. This agrees with the results of Thomas and Call (1973) who concluded that snack food consumed by teenagers are of better quality than the media would have us believe. A change in the values held by society probably explains these results. Today's teenagers are becoming increasingly health-conscious and weight- conscious. This is partly due to changes in parents' values and partly to the coverage given health topics by the media.

The relationship between parents as gatekeepers and liking snack foods prepackaged in a box or bag is interesting, since the kinds of foods which are available this way were not found among the top ten snack foods consumed by adolescents. While teenagers may like these kinds of food, it appears that perhaps parents may be influencing them towards non-consumption.

The finding of late afternoon and evening as the most common snack time is supported by the results of Hinton et

al. (1963). After skipping breakfast and then consuming a light lunch, most teenagers are ravenously hungry by the time school lets out. They begin to eat after school and the eating continues until bedtime.

Although they snacked after school, students did not spend a great deal of money on snacks. This is not surprising, in light of the fact that most snacking occurred at home.

Although hunger was the main reason given for snacking, it was not without a leisure or social component. Many teenagers indicated that they snacked while watching television and when out with friends, but not while doing homework. Those who did snack while doing homework were meal skippers for whom a snack at that time of day may have been a replacement for their evening meal.

The major snack location for adolescents appears to be at home, although those who are highly active socially have a greater tendency to snack elsewhere. Since the majority of the sample reported spending only $1.00 or less per day, it seems reasonable to conclude that most snacking does occur at home.

Those who do snack away from home appear to be eating in fast-food outlets and in the school cafeteria. The concern over student spending at school vending machines may be unwarranted since vending machines ranked fifth out of eight snacking locations. A large proportion of the

sample (83.8%) reported spending very little or no money at school vending machines. Also, most of the students claimed that they did not snack at school. It would appear that spending in vending machines is primarily used to supplement lunches since less than $1.00 per day is spent on food by the majority of students.

An overwhelming majority of the sample ranked themselves or a friend as snack companion and very few indicated that they snacked with a member of their family. This is supported by the previous finding of low parental influence. Parents, therefore, appear to have little influence on snacks. This is unfortunate in light of Martin's (1971) claim that eating alone or with peers is instrumental in the development of poor eating habits.

An interesting relationship between extra-curricular activities and snacking with friends was observed. It appears that those who do not become involved in extra-curricular activities have a greater tendency towards snacking with friends than those who do become involved. The demands of extra-curricular involvement perhaps leave little time for socializing in the form of snacking.

The more money spent per day on food, the greater the tendency to snack when out with friends. Those who do not spend any money on food, logically, would not snack when out with friends unless the cost was covered by the friend.

Support was found for the claim by other researchers (Moomaw, 1978; Thomas & Call, 1973) that snacking comprises a major part of the food intake of adolescents. Snacking was even more important for those who did not eat meals with the rest of their household, and made their own meal decisions instead. Those who eat meals alone appear to have more irregular eating habits in general than those who eat with their families.

Chapter VI

CONCLUSIONS, IMPLICATIONS, AND SUGGESTIONS FOR FURTHER RESEARCH

Conclusions

When reading the conclusions to this study, it is important to remember that the sample size was limited, and the study itself was limited to a particular school system. Caution must therefore be exercised before generalizing beyond the group studied.

Snack Definition

From the results of the study, it can be seen that high school students have developed, and are able to articulate the concept of "snack". Although there were many variations on the theme, it may be concluded that for high school students, snacking means "eating a small amount of food in between meals to satisfy hunger or to fill the gap until the next meal."

Snacking Habits

The survey measured many diverse components of snacking habits of high school students. Based on the analysis of these snacking habits, the following generalizations can be made:

1. The incidence of snacking among high school students was relatively high.

2. The snack food preferences of high school students were, for the most part, nutritionally and dentally sound.

3. High school students snack after school and in the evening.

4. Snacking occurred most frequently at home.

5. High school students spent $1.00 or less per day on food.

6. Snacking which occurred away from home, occurred at fast food outlets and the school cafeteria.

7. Snacking occurred "alone or with a friend" as opposed to "with the family".

8. Snacking occurred while watching television or when out with a friend with greater frequency than when at work, at school or when doing homework.

In addition, some generalizations may be drawn from the description of the sample:

1. Approximately 60% of the sample were the correct weight.

2. Approximately 50% of the adolescents perceived their weight correctly.

3. Of those students who had misperceptions regarding their weight status, females perceived they were overweight while males perceived they were underweight.

4. More males than females were actually overweight.

5. Most students had taken some home economics courses. For girls, the majority of the courses were at the junior high level, while for boys the majority of the courses were at the senior high level.

6. The highest proportion of meal skipping occurred among those students who took senior high home economics only.

7. In comparison to students who had taken some home economics courses, more students who had never taken home economics were overweight.

8. Over half of the adolescents held part-time jobs.

9. The gatekeeper of meals in the household was parents.

10. The majority of students ate at least one meal with other members of their household; however, those who ate all meals alone had a greater tendency to skip meals.

11. Parental influence and peer group influence on food habits was low.

None of the demographic, family background, or psychographic variables in this study distinguished

response patterns that differed significantly from the response by the total sample. Thus these variables, as measured in this study, cannot be used to segment high school students with reference to their snacking habits.

Implications

The results of this study would indicate that high school students are frequent snackers and that they are snacking on foods which could be considered relatively healthful. "Junk food junkies" appear to represent a minority of this high school population. This should be acknowledged by nutrition educators and snacking should become a significant concept in nutrition curricula. Teenagers snack regardless of adult opinion on the subject, so that the logical decision for nutrition educators would seem to be to accomodate snacking rather than trying to eliminate the habit. The ideas of snacking as a legitimate part of the daily food intake, and planning for nutritionally beneficial snacks should be incorporated into the curriculum. To be most effective, teaching these concepts in the affective rather than the cognitive domain is essential. This implies allowing for an exploration of nutritionally sound means for

incorporating snacks into the total daily intake. This will lead, ultimately, to accomodating the lifestyle changes which have occurred in the lives of today's teenagers.

Students are hungry outside of regularly scheduled meal times, therefore snacking becomes a major part of their food intake. Since snacking does not appear to be an isolated phenomena and may be directly dependent upon meal-time eating habits, curricula must address these two concepts coincidentally and with equal importance.

The needs being met through snacking appear to differ from the needs being met by eating. Gifft et al. (1972) and Lowenberg et al. (1979) pointed out that food habits may be explained by using Maslow's theory of human motivation: needs at the basic survival level must be met before individuals concern themselves with uses of food at the social level. Since in this study, hunger proved to be the most important reason for snacking, snacking appears to fulfill the basic need of survival. While eating still embodies the notion of hunger, it appears that eating may be used to fulfill needs at the higher levels of belonging, status, and self-actualization. This difference should be noted when discussing food habits and foodways.

Since a fairly large proportion of high school girls take home economics courses at the junior high level only,

the course content at that level should include all of the major nutrition concepts considered important in establishing good food habits. Boys, however, are most likely to take home economics at the senior high level. Therefore, all of these major nutrition concepts must be reviewed in Food Science 10.

The majority of students hold part-time jobs which places restrictions on the amount and kind of assignments they may be able to complete. There is no point in planning activities with which students cannot realistically cope.

Though the majority of students reported that some meals per day were eaten together with other members of their household, almost 15% of the sample did not eat any meals with the household. In light of Martin's (1971) observation that those who eat alone or with peers do not usually form good eating habits, the curriculum may need to emphasize the advantages of eating meals as a family group.

Suggestions for Further Research

1. Snacking needs to be analyzed in the context of the total daily intake since snacking is a legitimate food

habit and comprises a major part of the intake of adolescents.

2. The snack foods consumed most often by students in this study were generally nutritious. Further research is required to determine if the popular concept of snacking (i.e., snacking on non-nutritious foods) may be more descriptive of students in other age groups.

3. Although not explicitly found in this study, the concept of snacking may carry overtones of guilt on the part of the snacker. The impression gained through talking with students before and after the survey administration, was of snacking as "cheating" on the rest of the day's intake. Attitudes toward snacking, such as that of "guilt", should be explored further in order to determine their impact on food habit development.

4. Since many overweight students do not appear to register for home economics courses, other ways of reaching overweight students with nutrition education need to be explored.

5. The finding of low peer group influence appears to contradict the well established notion of high peer group influence among adolescents. The research methodology chosen in this study (i.e., survey method) should be tested against other methods (i.e., interview, observation, experimentation) in order to corroborate the results.

Summary Statement

The results of this study have shown snacking to be a major component in the food habits of the high school students in this sample. In view of this, nutrition educators must take a realistic look at snacking habits as they presently exist and assist students in rationalizing snacking habits in order to choose snacks which will contribute to a nutritionally balanced daily intake. Since knowledge, in itself, may not be sufficient to motivate adolescents to develop good snacking habits, teaching these concepts at the affective level becomes the task and the challenge for nutrition educators to explore.

REFERENCES

References

Alberta Education, Availability of non-nutritious foods in Alberta schools. Planning and Research Bulletin 77-1, 1977.

Allen, D.D., Patterson, Z.J., and Warren, G.L. Nutrition, family commensality, and academic performance. Journal of Home Economics, 1970. 62, 333-337.

Armstrong, J.M., Peckham, J.L., Templeton, E.S., Boldly, M. A., and McLaren, B.A. A Study of food use by grade nine students in metropolitan Toronto. Canadian Home Economics Journal, 1964, 14, 119-124.

AuCoin, D., Haley, M., Rae, J., and Cole, M. A comparative study of food habits: Influence of age, sex and selected family characteristics. Canadian Journal of Public Health, 1972, 63, 143-151.

Baker, M.J. Influence of nutrition education on fourth and fifth graders. Journal of Nutrition Education, 1972, 4, 55.

Birch, H.G. Malnutrition, learning and intelligence. American Journal of Public Health, 1972, 62, 773-784.

Blank, S.S. Descriptive statistics. New York: Appleton-Century-Crofts, 1968.

Breeling, J.L. Adolescent nutrition. Illinois Medical Journal, 1971, 140, 217-220.

Broom, L. and Selznick, P. Sociology: A text with adapted readings. New York: Harper and Row, 1977.

Coleman, J.S. The adolescent society. New York: The Free Press of Glencoe, 1961.

Dwyer, J.I., Feldman, J.J., and Mayer, J. Adolescent dieters: Who are they? American Journal of Clinical Nutrition, 1967, 20, 1045-1056.

Edwards, A.L. Techniques of attitude scale construction. New York: Appleton-Century-Crofts, 1957.

Eppright, E.S. Factors influencing food acceptance. Journal of the American Dietetic Association, 1947, 23, 579.

Everson, G.J. Bases for concern about teenagers' diets.

Journal of the American Dietetic Association, 1960, 36, 17-21.

Fathauer, G.H. Food Habits - An anthropologist's view. Journal of the American Dietetic Association, 1960, 37, 335-338.

Fetherston, D.W. Food consumption patterns of the students of a senior high school in a large urban school district. Unpublished master's thesis. University of Calgary, 1976.

Fine, P.A. Family nutrition - As it is. Food and Nutrition News, 1972, 43, (3-4), 2.

Futrell, M.P., Kilgore, L.T., and Windham, P. Nutritional status of negro preschool children in Mississippi. Journal of the American Dietetic Association, 1971, 59, 224-227.

Gifft, H.H., Washbon, M.B., and Harrison, G.G. Nutrition, behavior, and change. Englewood Cliffs: Prentice-Hall, 1972.

Gutherie, H.A. Introductory nutrition. Saint Louis: C.V. Mosby Company, 1979.

Hampton, M.C., Huenemann, H.L., Shapiro, L.R., and Mitchell, B.W. Caloric and nutrient intakes of teenagers. Journal of the American Dietetic Association, 1967, 50, 385-395.

Hendel, G.M., Burk, M.C. and Lund, L.A. Socio-economic factors influencing children's diets. Journal of Home Economics, 1965, 57, 205-208.

Hinton, M.A., Chadderton, H., Eppright, E.S., and Wolins, L. Eating behavior and dietary intake of girls 12 - 14 years old. Journal of the American Dietetic Association, 1963, 43, 223-227.

Huenemann, R.L., Shapiro, L.R., Hampton, M.C., and Mitchell, B.W. A longitudinal study of gross body composition and body conformation, and their association with food and activity in a teenage population. American Jounral of Clinical Nutrition, 1966, 18, 325-333.

Huenemann, R.L., Shapiro, L.R., Hampton, M.C., and Mitchell, B.W. Food and eating practices of teenagers. Journal of the American Dietetic Association, 1968, 53,

17-24.

Kerlinger, F.N. Foundations of behavioral research. New York: Holt, Rinehart and Winston, 1965.

Kowtaluk, H., and Kopan, A. Food for today. Peoria: Chas. A. Bennett, 1977.

Krause. M.V. and Hunscher, M.A., Food, nutrition and diet therapy. Philadelphia: W.B. Saunders, 1972.

Krech, D., Crutchfield, R.S., and Ballachecy, E.L., Individual in society. New York: McGraw-Hill, 1963.

Kunkel, N. and Hall, O. Influence of nutritional teaching on adolescent's eating habits. Journal of the American Dietetic Association, 1958, 34, 1220-1222.

Lee, E.E. Food fads, nutrition and teenage mothers. Childhood Education, 1977, 53, 143-146.

Leverton, R.M. The paradox of teen-age nutrition. Journal of the American Dietetic Association, 1968, 53, 13-16.

Lewin, K. Forces behind food habits and methods of change. in The problem of changing food habits, National Research Council Bulletin 108. Washington: US Government Printing Office, 1943.

Litman, T.J., Cooney, J.P., and Stief, R. The views of Minnesota school children on food. Journal of the American Dietetic Association, 1964, 45, 433-440.

Lowenberg, M.E., Todhunter, E.N., Wilson, E.D., Savage, J.R. and Lubawski, J.L. Food and people. New York: John Wiley and Sons, 1979.

Mapes, M. Gulp - An alternate method for reaching teens. Journal of Nutrition Education, 1977, 9, (1), 12-16.

Martin, E.A. Nutrition in action. Toronto: Holt, Rinehart and Winston, 1971.

Matheson, S. Back to school with good snacks. Nutrition Notes. Fredericton Department of Health, 1978, 13, (9).

McCaie, G. Teenage eating habits. Nutrition Notes. Fredericton Department of Health, 1978, 15, (8).

Mead, M. (Ed.). The problem of changing food habits. National Research Council Bulletin 108. Washington:

US Government Printing Office, 1943.

Mirenda, R.M. A study of the dietary habits of junior high school students with implications for nutrition education. Proceedings of the International Congress on Nutrition, 1966, 174.

Moomaw, M.S. Involving students in nutrition education. Journal of School Health, 1978, 48, 121-123.

Mueller, J.H., Schuessler, K.F., and Costner, H.L. Statistical reasoning in sociology. Boston: Houghton Mifflin, 1977.

Munns, M. The values of adolescents compared with parents and peers. Adolescence, 1972, 7, 519-524.

Nie, N., Hull, C., Jenkins, J., Steinbrenner, K., and Bent, D. Statistical package for the social sciences. Toronto: McGraw-Hill, 1975.

Nutrition Canada Alberta Survey Report. Ottawa: Department of National Health and Welfare, 1975.

Nutrition Canada: Food patterns consumption report. Ottawa: Department of National Health and Welfare, 1977.

Parrish, J.B. Implications of changing food habits for nutrition educators. Journal of Nutrition Education, 1971, 2, 140-146.

Rozin, P. Psychobiological and cultural determinants of food choice. In T. Silvertone (Ed.), Appetite and food intake. Berlin: Dahlem Konferenzen, 1976.

Sanjur, D. Food habits of low income children in North New York. Journal of Nutrition Education, 1971, 2, 85.

Schafer, R. and Yetley, E.A. Social psychology of food faddism. Journal of the American Dietetic Association, 1975, 66, 129-133.

Schorr, B.C., Sanjur, D., and Erickson, E.C. Teenage food habits. Journal of the American Dietetic Association, 1972, 61, 415-420.

Simoons, F.J. Food habits as influenced by human culture: Approaches in anthropology and geography. In T. Silverstone (Ed.), Appetite and food intake. Berlin: Dahlem Konferenzen, 1976.

Spindler, E.B. and Acker, G. Teenagers tell us about their nutrition. Journal of the American Dietetic Association, 1963, 43, 228-231.

Stare, F.J. and McWilliams, M. Living nutrition. Toronto: John Wiley and Sons, 1973.

Steelman, V.P. Attitudes toward food as indicators of sub-cultural value systems. Home Economics Research Journal, 1976, 5, (1), 21-32.

Steuart, G.W. Psychological aspects of dietary change. Illinois Teacher. 1976, 14, 191-197.

Thomas, J.A. and Call D.L. Eating between meals - A nutrition problem among teenagers? Nutrition Reviews, 1973, 31, (5), 137-139.

Thompson, J.K. The relationship of nutrition knowledge, attitudes and practices of grade 8 secondary school students in Vancouver, to selected environmental variates. Unpublished master's thesis. University of British Columbia, 1975.

Thompson J.K. and Schwartz, N. Nutrition knowledge, attitudes and practices of eighth grade students. Journal of the Canadian Dietetic Association, 1977, 38, 222-228.

Trenholme, M. and Milne, H. Studies of teenage eating in Ontario. I: Evaluation of teenage food selection. Canadian Journal of Public Health, 1963, 54, 455-462.

Venable, T.C. Nutrition education - What is the problem. Journal of the American Dietetic Association, 1957, 33, 600-601.

Wharton, M.A. Nutrient intake of adolescents. Journal of the American Dietetic Association, 1963, 42, 306-310.

Wise, B.I. A study of college students food habits to ascertain nutrient intake and factors influencing food habits. Unpublished doctoral dissertation. Purdue University, 1974.

Appendix A

Height-Weight-Age Tables

Table 1

Height-Weight-Age Table for

Boys of School Age

(Weight is expressed in pounds)

HT. INS.	5 YRS.	6 YRS.	7 YRS.	8 YRS.	9 YRS.	10 YRS.	11 YRS.	12 YRS.	13 YRS.	14 YRS.	15 YRS.	16 YRS.	17 YRS.	18 YRS.	19 YRS.	HT. INS.
38	34	34														38
39	35	35														39
40	36	36														40
41	38	38	38													41
42	39	39	39	39												42
43	41	41	41	41												43
44	44	44	44	44												44
45	46	46	46	46	46											45
46	47	48	48	48	48											46
47	49	50	50	50	50	50										47
48		52	53	53	53	53										48
49		55	55	55	55	55	55									49
50		57	58	58	58	58	58	58								50
51			61	61	61	61	61	61								51
52			63	64	64	64	64	64	64							52
53			66	67	67	67	67	68	68							53
54				70	70	70	70	71	71	72						54
55				72	72	73	73	74	74	74						55
56				75	76	77	77	77	78	78	80					56
57					79	80	81	81	82	83	83					57
58					83	84	84	85	85	86	87					58
59						87	88	89	89	90	90	90				59
60						91	92	92	93	94	95	96				60
61							95	96	97	99	100	103	106			61
62							100	101	102	103	104	107	111	116		62
63							105	106	107	108	110	113	118	123	127	63
64								109	111	113	115	117	121	126	130	64
65								114	117	118	120	122	127	131	134	65
66									119	122	125	128	132	136	139	66
67									124	128	130	134	136	139	142	67
68										134	134	137	141	143	147	68
69										137	139	143	146	149	152	69
70										143	144	145	148	151	155	70
71										148	150	151	152	154	159	71
72											153	155	156	158	163	72
73											157	160	162	164	167	73
74											160	164	168	170	171	74

The following percentages of net weight have been added for clothing (shoes and sweaters not included): 35 to 64 pounds: 3.5 per cent; 64 pounds and over: 2.0 per cent.

Reprinted from Food, Nutrition and Diet Therapy by M.V. Krause and M.A. Hunscher, 1972, 699-700.
Reprinted with permission of W.B. Saunders Company and author.

Table 2

Height-Weight-Age Table for

Girls of School Age

(Weight is expressed in pounds)

HT INS.	5 YRS.	6 YRS.	7 YRS.	8 YRS.	9 YRS.	10 YRS.	11 YRS.	12 YRS.	13 YRS.	14 YRS.	15 YRS.	16 YRS.	17 YRS.	18 YRS.	HT. INS.
38	33	33													38
39	34	34													39
40	36	36	36												40
41	37	37	37												41
42	39	39	39												42
43	41	41	41	41											43
44	42	42	42	42											44
45	45	45	45	45	45										45
46	47	47	47	48	48										46
47	49	50	50	50	50	50									47
48		52	52	52	52	53									48
49		54	54	55	55	56	56								49
50		56	56	57	58	59	61	62							50
51			59	60	61	61	63	65							51
52			63	64	64	64	65	67							52
53			66	67	67	68	68	69	71						53
54				69	70	70	71	71	73						54
55				72	74	74	74	75	77	78					55
56					76	78	78	79	81	83					56
57					80	82	82	82	84	88	92				57
58						84	86	86	88	93	96	101			58
59						87	90	90	92	96	100	103	104		59
60						91	95	95	97	101	105	108	109	111	60
61							99	100	101	105	108	112	113	116	61
62							104	105	106	109	113	115	117	118	62
63								110	110	112	116	117	119	120	63
64								114	115	117	119	120	122	123	64
65								118	120	121	122	123	125	126	65
66									124	124	125	128	129	130	66
67									128	130	131	133	133	135	67
68									131	133	135	136	138	138	68
69										135	137	138	140	142	69
70										136	138	140	142	144	70
71										138	140	142	144	145	71

The following percentages of net weight have been added for clothing (shoes and sweaters not included): 35 to 65 pounds: 3.0 per cent; 66 to 82 pounds: 2.5 per cent; 83 pounds and over: 2 per cent.

Reprinted from Food, Nutrition and Diet Therapy by M.V. Krause and M.A. Hunscher, 1972, 699-700.
Reprinted with permission of W.B. Saunders Company and author.

Appendix B

Questionnaire

EATING ON THE RUN

This questionnaire is about you and the foods you eat. In it you will also be asked questions about where you eat, when you eat, who you eat with, and why you eat. Students who have tried the questionnaire out already, have found it easy and fun to answer.

It is important to the study that all questions be answered as completely as possible. Since your name is not asked for, you answers will remain anonymous. No one will ever be able to associate your name with any specific answers. Your help in carefully answering each question is very much appreciated. It will take about 20 minutes of your time. Thank you.

Computer use only	
cc	code
1-3	ID
4	card 1
5-6	
7-8	
9	
10	
11	
12-13	
14	
15	
16	
17	
18	
19	
20	

1. Name of school _____
2. Class you are now in _____
3. Grade _____
4. Age _____
5. Sex: male _____
   female _____
6. Weight _____
7. Height _____
8. Check which of the following you consider yourself to be:
   (1) overweight _____
   (2) underweight _____
   (3) correct weight _____
9. How many people, counting yourself, live in your household?
   _____ people
10. Do you have a part time job? (1) yes _____
    (2) no _____
11. Beside each of the following courses:
    put a 0 if you have never taken the course
    put a 1 if you are taking the course now
    put a 2 if you have taken the course at some previous time
    _____ Grade 8 Home Economics
    _____ Grade 9 Home Economics
    _____ Food Science 10
    _____ Food Science 20
    _____ Food Science 30
12. The person who most often shops for groceries in my household is: (check one group only)
    (1) parents or other adults _____
    (2) sister/brother _____
    (3) myself _____

	cc	code
13. Check who usually decides what foods will be prepared for meals in your household on week days: (check one group only)		
(1) parents or other adults _____		
(2) sister/brother _____	21	
(3) myself _____		
14. Which of the following meals do most of the people in your household eat together on an average school day?		
(1) breakfast _____	22	
(2) the noon meal _____	23	
(3) the evening meal _____	24	
(4) on an average school day, none of the meals are eaten together _____	25	
15. Describe, as fully as possible, what the word "snack" means to you.	26-27	
	28-29	
	30-31	
	32-33	
	34-35	
16. Rank the following from 1 to 4 according to who you are likely to snack with on an average school day:		
put a 1 beside who you most often snack with		
put a 2 beside who you snack with second most		
put a 3 beside who you snack with third most		
put a 4 beside who you snack with the least		
_____ a friend	36	
_____ my brother or sister	37	
_____ my mother or father	38	
_____ I usually snack by myself	39	
17. Rank the following from 1 to 4 according to how often you snack:		
put a 1 if this is when you snack the most		
put a 2 if this is when you snack the second most		
put a 3 if this is when you snack the third most		
put a 4 if this is when you snack the least		
_____ before breakfast	40	
_____ between breakfast and lunch	41	
_____ after lunch but before the evening meal	42	
_____ after the evening meal but before going to bed	43	

18. For each food listed in the following chart, CIRCLE how often you eat it <u>as a snack</u>. DO NOT COUNT MEALTIME EATING.

					cc	code
nuts	4	3	2	1	44	
sunflower seeds	4	3	2	1	45	
pumpkin seeds	4	3	2	1	46	
cheese	4	3	2	1	47	
crackers	4	3	2	1	48	
yogurt	4	3	2	1	49	
raw fruit	4	3	2	1	50	
raw vegetables	4	3	2	1	51	
fruit juice	4	3	2	1	52	
bread/toast	4	3	2	1	53	
muffin	4	3	2	1	54	
cereal	4	3	2	1	55	
egg	4	3	2	1	56	
sandwich	4	3	2	1	57	
hot dog	4	3	2	1	58	
hamburger	4	3	2	1	59	
pizza	4	3	2	1	60	
salad	4	3	2	1	61	
soup	4	3	2	1	62	
pickles	4	3	2	1	63	
cold meats	4	3	2	1	64	
plain milk	4	3	2	1	65	
chocolate milk	4	3	2	1	66	
milk pudding	4	3	2	1	67	
milk shake	4	3	2	1	68	
malted milk	4	3	2	1	69	
ice cream	4	3	2	1	70	
raisins	4	3	2	1	71	
popcorn	4	3	2	1	72	
french fries	4	3	2	1	73	
potato chips	4	3	2	1	74	
pretzels	4	3	2	1	75	
cheezies	4	3	2	1	76	
diet soft drink	4	3	2	1	77	
regular soft drink	4	3	2	1	78	
cookies	4	3	2	1	79	
donut	4	3	2	1	80	
cake	4	3	2	1	5	
pie	4	3	2	1	6	
candy bars	4	3	2	1	7	

					cc	code
19. On an average school day, approximately how much money do you usually spend on food? (Answer in actual amount of money) $_____					8-11	
20. Food is available to us in many places, but we may spend different amounts of money at each place. CIRCLE how much of your money you spend <u>on snacks</u> at each of the following places:	NONE	VERY LITTLE	SOME BUT NOT ALL	ALL OR MOST		
school cafeteria	4	3	2	1	12	
school vending machines	4	3	2	1	13	
fast food outlet (e.g. McDonald's)	4	3	2	1	14	
convenience store (e.g. Mac's Milk, 7-11)	4	3	2	1	15	
restaurant	4	3	2	1	16	
snack bar in department store	4	3	2	1	17	
food section of drugstore	4	3	2	1	18	
grocery store	4	3	2	1	19	
For the following items, CIRCLE how often you usually do each one:						
21. How often do you participate in extra-curricular activities in school or in the community?	4	3	2	1	20	
22. How often do you go out with friends in the evening?	4	3	2	1	21	
23. How often do you date?	4	3	2	1	22	
24. How often are you likely to skip breakfast?	4	3	2	1	23	
25. How often are you likely to skip lunch?	4	3	2	1	24	
26. How often are you likely to skip your evening meal?	4	3	2	1	25	

In the following section, read each statement carefully and then CIRCLE the appropriate number to show how you feel about it:

						cc	code
27. I snack in fast-food restaurants because all my friends are there.	5	4	3	2	1	26	
28. I usually make up my snacks from scratch by putting various foods together.	5	4	3	2	1	27	
29. Most of the time I snack on foods that need no additional preparation.	5	4	3	2	1	28	
30. In general, I do not like snack foods that are ready-to-eat out of a box or bag.	5	4	3	2	1	29	
31. The first thing I usually do when I get home from school is find a snack.	5	4	3	2	1	30	
32. If I am all alone for the evening I will not usually eat anything.	5	4	3	2	1	31	
33. At a friend's birthday party, I would probably eat a piece of birthday cake, even if I was not hungry.	5	4	3	2	1	32	
34. When I'm with a date at a restaurant I feel that I should order the same food as my date so I won't feel different.	5	4	3	2	1	33	
35. When I go out with my friends to eat, it is usually a group decision as to what we order.	5	4	3	2	1	34	
36. If I drank milk when everyone else was having pop, I would probably be given a hard time.	5	4	3	2	1	35	
37. I think that snacking is a major part of my food intake.	5	4	3	2	1	36	
38. I feel that my parents have a strong influence on what I eat.	5	4	3	2	1	37	
39. The people who live together in my household get along well with each other.	5	4	3	2	1	38	
40. My parents are always criticizing me for what I eat.	5	4	3	2	1	39	
41. In my household, everyone is expected to eat what is served.	5	4	3	2	1	40	
42. In my household, we eat whatever we want for snacks.	5	4	3	2	1	41	
43. I spend most of money on snacks.	5	4	3	2	1	42	

						cc	code
44. I enjoy having meals with my family.	5	4	3	2	1	43	
45. When I snack I feel guilty because my parents would not approve.	5	4	3	2	1	44	
46. I think I snack a lot.	5	4	3	2	1	45	
47. I engage in a lot of sports and physical activities.	5	4	3	2	1	46	
48. Most of my hobbies do not involve a lot of physical activities.	5	4	3	2	1	47	
49. I spend most of my leisure time by myself.	5	4	3	2	1	48	
50. When I am out with my friends we usually have a snack.	5	4	3	2	1	49	
51. When I snack I am usually at home.	5	4	3	2	1	50	
52. I usually snack on something while I do my homework.	5	4	3	2	1	51	
53. When I snack I am usually at school.	5	4	3	2	1	52	
54. When I snack I am usually out with friends or on a date.	5	4	3	2	1	53	
55. While I watch T.V. I usually have a snack.	5	4	3	2	1	54	
56. When I snack I am usually at work.	5	4	3	2	1	55	

Appendix C

Data Reduction

Table 1

Weight Status

Actual Weight	Perceived Weight	New Variable Response Category
over	over	1
over	under	2
over	correct	3
under	over	4
under	under	5
under	correct	6
correct	over	7
correct	under	8
correct	correct	9

Table 2

Size of Household

Number of People	Household Size
1 - 3	small
4 - 7	medium
8 - 11	large

Table 3

Home Economics Registration

Grade 8 or Grade 9	Food Sc. 10, 20, or 30	New Variable Response Category
no	no	no home economics
yes	yes	some junior high some senior high
yes	no	junior high only
no	yes	senior high only

Table 4

Gatekeeper

Grocery Shopper	Meal Decision Maker	New Variable Response Category
parents	parents	1
parents	brother/ sister	2
parents	self	3
brother/ sister	parents	4
brother/ sister	brother/ sister	5
brother/ sister	self	6
self	parents	7
self	brother/ sister	8
self	self	9

Table 5

Meal Patterns of the Household

Meals Eaten Together				
Breakfast	Noon Meal	Evening Meal	No Meals	New Variable Response Category
-	-	-	yes	none
yes	-	-	-	
yes	yes	-	-	
-	yes	-	-	some
-	-	yes	-	
-	yes	yes	-	
yes	-	yes	-	
yes	yes	yes	-	all

Table 6

Amount of Money Spent on Food

Response to Item 19	New Variable Response Category
0	1
$0.01 - $1.00	2
$1.01 - $2.00	3
over $2.00	4

Table 7

Parent's Influence on Food Habits

Response to Items 38, 40, 41, 42, and 45	New Variable Response Category
strongly agree or agree	high influence
undecided	undecided
strongly disagree or disagree	low influence

Table 8

Congenial Interaction Among Household Members

Response to Items 39 and 44	New Variable Response Category
strongly agree or agree	very congenial
undecided	undecided
strongly disagree or disagree	not congenial

Table 9

Peer Group Influence

Response to Items 27, 33, 34, 35, and 36	New Variable Response Category
strongly agree or agree	high influence
undecided	undecided
strongly disagree or disagree	low influence

Table 10

Meal Skipping

Response to Items 24, 25, and 26	New Variable Response Category
very often	high
fairly often	moderate
seldom or never	low

Table 11

Interaction With Other People

Response to Items 22, and 23	Response to Item 49	New Variable Response Category
very often or fairly often	strongly disagree or disagree	high interaction
seldom or never	strongly agree or agree	low interaction

Table 12

Participation in Sports

Response to Items 47 and 48	New Variable Response Category
strongly disagree or disagree	high participation
strongly agree or agree	low participation

Appendix D

Ranking Technique

Ranking Technique

Response frequencies to items 16, 17, 18 and 20 were subjected to a weighting technique to obtain ranks for further analysis. The weighting technique used was based upon Edwards' method of summated rating (Edwards, 1957). Edwards used the summated rating method to weight responses to Likert-type questions where respondents were required to agree or disagree with a selection of statements. The proportion of subjects giving each category of response was weighted so that the response made by individuals with the most favorable attitude toward the item would have the highest positive weight, and those with the least favorable attitude toward the item would have the lowest weight. Edwards obtained a total score by summating the ratings.

The weighting technique used in this study differed from Edwards' because the items did not require agreement or disagreement. Items 16 and 17 of the questionnaire required respondents to rank their snack companion and snack time by frequency. The proportion of the response ranking a friend as number 1 received the largest weight factor of 4; the proportion of the response ranking a friend as 2 received the weight factor of 3; the proportion of the response ranking a friend as 3 received

a weight factor of 2; and the proportion of the response ranking a friend 4 received the smallest weight factor of 1. The weight factors were derived from the number of response categories for each item and were assigned to each response frequency in descending order. Ranking a friend as number 1 (the person you snack with most often) was treated in the same manner as Edwards treated the response with the most favorable attitude toward an item. Thus a rank of number 1 was given the highest positive weight. The same technique was used for item 17 of the questionnaire.

For item 18, the response of "very often" received the largest weighting factor because "very often" was seen to be most favorable towards snacking on the particular food. "Never" received the smallest weighting factor. Similarly, in item 20, "all or most" received the largest weight factor and "none" received the smallest weight factor.

The proportion giving each response was weighted in this manner and then summated for each item. By comparing the summated weights in descending order an overall rank was obtained. Tied ranks were assigned consecutive ranks which were then averaged to obtain a new average rank for all of the tied ranks (Blank, 1968, p.9).

Appendix E

Sample Description

Table 1

Total Sample by Grade and Sex

(figures expressed as a percentage of total sample)

Grade	Male	Female	Total
Grade 10	8.3	11.9	20.2
Grade 11	14.2	16.2	30.4
Grade 12	22.5	26.9	49.4
Total	45.3	54.7	100.0

(N = 253)

Table 2

Age and Sex of Sample

(figures expressed as a percentage of the total sample)

Age	Male	Female	Total
15 years	6.3	9.1	15.4
16	12.2	14.6	26.8
17	18.9	20.1	39.0
18	7.5	11.0	18.5
19	0.4	0.0	0.4
Total	45.3	54.7	100.0

(N = 254)

Table 3

Weight Status by Sex

(figures expressed as a percentage)

Weight Status				
Actual	Perceived	Male	Female	Total Sample
over	over	14.2	8.0	10.8
over	under	1.8	0.0	0.8
over	correct	16.8	2.2	8.8
under	over	0.9	0.7	0.8
under	under	8.8	4.3	6.4
under	correct	3.5	19.6	12.4
correct	over	3.5	33.3	19.9
correct	under	13.3	2.2	7.2
correct	correct	37.2	29.7	33.1
	Total	100.0	100.0	100.0

(N = 251, Chi-Square = 74.16, df = 8, p = 0.0000)

Table 4

Weight Status of Sample by Home Economics Registration

(figures expressed as a percentage)

Weight Status						
Actual	Perceived	No H. Ec.	Some Jr some	Jr Sr	Junior Only	Senior Only	Total Sample
over	over	20.4	8.2	7.8	10.5	10.8
over	under	4.1	0.0	0.0	0.0	0.8
over	correct	20.4	5.5	5.6	7.9	8.8
under	over	2.0	1.4	0.0	0.0	0.8
under	under	2.0	2.7	6.7	18.4	6.4
under	correct	6.1	8.2	22.2	2.6	12.4
correct	over	10.2	31.5	24.4	0.0	19.9
correct	under	4.1	6.8	2.2	23.7	7.2
correct	correct	30.6	35.6	31.1	36.8	33.1
	Total	100.0	100.0	100.0	100.0	100.0

(N = 250, Chi-Square = 84.15, df = 24, p = 0.0000)

Table 5

Registration in Home Economics Courses by Sex

(figures expressed as a percentage)

Courses	Male	Female	Total Sample
No Home Economics	42.6	0.7	19.8
Some Junior High Some Senior High	13.0	42.8	29.2
Junior High Only	13.0	54.3	35.6
Senior High Only	31.3	2.2	15.4
Total	100.0	100.0	100.0

(N = 253, Chi-Sqaure = 139.23, df = 3, p = 0.0000)

Table 6

Registration in Home Economics Courses

(figures expressed as a percentage of the total sample)

Course	Taken in Past	Current Registration	Never Taken
Grade 8	55.7	0.0	44.3
Grade 9	62.2	0.0	37.4
Food Sc. 10	13.8	30.8	55.3
Food Sc. 20	5.1	3.2	91.7
Food Sc. 30	0.4	2.4	97.2

(N = 253)

Table 7

Employment Status by Sex

(figures expressed as a percentage)

Status	Male	Female	Total Sample
Part-time Job	61.4	55.4	58.1
No Job	38.6	44.6	41.9
Total	100.0	100.0	100.0

(N = 253)

Table 8

Employment Status by Grade

(figures expressed as a percentage of the total sample)

Grade	Part-time Job	No Part-time Job
Grade 10	8.7	11.5
Grade 11	17.9	12.3
Grade 12	31.3	18.3
Total	57.9	42.1

(N = 252, Chi-Square = 6.06, df = 2, p = 0.0484)

Table 9

Money Spent on Food per Day by Employment Status

(figures expressed as a percentage of the total sample)

Money Spent On Food	Part-time Job	No part-time Job	Total Sample
None	4.8	7.2	12.0
$0.01 - $1.00	31.2	23.2	54.4
$1.01 - $2.00	13.2	8.4	21.6
Over $2.00	9.2	2.8	12.0
		Total	100.0

(N=250, Chi-Square = 8.53, df = 3, p=0.0363)

Table 10

Response to "I spend most of my money on snacks"

Response	Percentage of Total Sample
Strongly Disagree	41.5
Disagree	36.0
Undecided	8.3
Agree	7.9
Strongly Agree	6.3
Total	100.0

(N= 254)

Table 11

Size of Household

Number of People	Percentage of Total Sample
1 - 3 (small)	16.7
4 - 7 (medium)	75.8
8 & more (large)	7.5

(N= 252, Mode = 5.0, Minimum = 1, Maximum = 11)

Table 12

Gatekeeper of Meals by Size of Household

(figures expressed as a percentage of the total sample)

Gatekeeper		Household Size			
Grocery Shopper	Meal Decision Maker	Small	Medium	Large	Total Sample
parents	parents	11.9	68.3	6.7	86.6
parents	brother/ sister	-	1.2	0.4	1.6
parents	self	3.2	5.6	0.4	9.5
brother/ sister	parents	-	-	-	-
brother/ sister	brother/ sister	-	0.4	-	0.4
brother/ sister	self	-	-	-	-
self	parents	-	-	-	-
self	brother/ sister	-	-	-	-
self	self	1.6	0.4	-	2.0
	Total	16.7	75.8	7.5	100.0

(N = 253, Chi-Square = 23.97, df = 8, p = 0.0023)

Table 13

Gatekeeper of Meals by Meal Patterns of the Household

(figures expressed as a percentage of the total sample)

Gatekeeper			
Grocery Shopper	Meal Decision Maker	None of the meals eaten together	Some of the meals eaten together
parents	parents	8.7	78.0
parents	brother/ sister	0.4	1.2
parents	self	3.9	5.5
brother/ sister	parents	-	-
brother/ sister	brother sister	0.4	-
brother/ sister	self	-	-
self	parents	-	-
self	brother/ sister	-	-
self	self	1.2	0.8
	Total	14.6	85.5

(N = 254, Chi-Square = 32.36, df = 4, p = 0.0000)

Table 14

Meal Patterns of the Household

(figures expressed as a percentage of the total sample)

Meal Pattern	Total Sample	Total Sample
No Meals Eaten Together		14.6
Some Meals Eaten Together		
Breakfast	7.5	
Noon Meal	0.8	85.4
Evening Meal	81.9	
All Meals Eaten Together		-
Total		100.0

(N = 254)

Table 15

Meal Patterns by Size of Household

(figures expressed as a percentage)

Meal Pattern	Size of Household			Total Sample
	Small	Medium	Large	
No Meals Eaten Together	28.6	11.5	5.3	13.9
Some Meals Eaten Together	71.4	88.5	94.7	86.1
Total	100.0	100.0	100.0	100.0

(N = 252, Chi-Square = 9.65, df = 2, p = 0.008)

Table 16

Meal Patterns by Degree of Congenial Interaction Among Family Members

(figures expressed as a percentage of the total sample)

Meal Pattern	Very Congenial	Undecided	Not Congenial	Total Sample
No Meals Eaten Together	7.5	3.5	3.5	14.5
Some Meals Eaten Together	67.7	8.7	9.1	85.5
Total	75.2	12.2	12.6	100.0

(N = 254, Chi-Square = 13.21, df = 2, p = 0.0014)

Table 17

Parents Influence on Food Habits by Sex

(figures expressed as a percentage)

Influence	Male	Female	Total Sample
High	0.9	-	0.4
Low	4.3	14.4	9.8
Not Classifiable	94.8	85.6	89.8
Total	100.0	100.0	100.0

(N = 254, Chi-Square = 8.24, df = 2, p = 0.0162)

Table 18

Parents Influence on Food Habits by Weight Status

(figures expressed as a percentage of the total sample)

Weight Status		High Influence	Low Influence	Not Classifiable
Actual	Perceived			
over	over	-	1.2	9.6
over	under	-	-	0.8
over	correct	-	0.4	8.4
under	over	0.4	-	0.4
under	under	-	-	6.4
under	correct	-	2.4	10.0
correct	over	-	1.6	18.3
correct	under	-	0.8	6.4
correct	correct	-	3.6	29.5

(N = 251, Chi-Square = 131.17, df = 16, p = 0.0000)

Table 19

Parents Influence on Food Habits by Size of Household

(figures expressed as a percentage of the total sample)

	Size of Household		
Influence	Small	Medium	Large
High	0.4	-	-
Undecided	-	-	-
Low	3.2	6.3	0.4
Not Classifiable	13.1	69.4	7.1

(N = 252, Chi-Square = 10.11, df = 4, p = 0.0386)

Table 20

Peer Group Influence by Meal Patterns of the Household

(figures expressed as a percentage of the total sample)

Influence	No Meals Eaten Together	Some Meals Eaten Together	All Meals Eaten Together	Total Sample
High	-	-	-	-
Undecided	-	-	-	-
Low	3.1	7.5	-	10.6
Not Classifiable	11.4	78.0	-	89.4
Total	14.5	85.5	-	100.0

(N = 254, Chi-Square = 4.24, df = 1, p = 0.0396)

Table 21

Meal Skipping by Home Economics Registration

(figures expressed as a percentage)

Registration	Meal Skipping			
	High	Moderate	Low	Not Classifiable
No Home Economics	-	-	46.0	54.0
Some Junior High Some Senior High	-	1.4	35.1	63.5
Junior High Only	-	1.1	24.4	74.4
Senior High Only	5.1	-	23.1	71.8
Total Sample	0.8	0.8	31.6	66.8

(N = 253, Chi-Square = 20.29, df = 9, p = 0.0162)

Table 22

Meal Skipping by Meal Patterns of the Household

(figures expressed as a percentage)

Meal Skipping	No Meals Eaten Together	Some Meals Eaten Together	All Meals Eaten Together	Total Sample
High	5.4	-	-	0.8
Moderate	5.4	-	-	0.8
Low	18.9	33.6	-	31.5
Not Classifiable	70.3	66.4	-	66.9
Total	100.0	100.0	-	100.0

(N = 254, Chi-Square = 25.71, df = 3, p = 0.0000)

Table 23

Interaction With Others

Level of Interaction	Percentage of Total Sample
High	43.7
Low	12.6
Not Classifiable	43.7
Total	100.0

(N = 254)

Table 24

Participation in Sports

Level of Involvement	Percentage of Total Sample
High	59.8
Low	22.8
Not Classifiable	17.3
Total	100.0

(N = 254)

Table 25

Involvement in Extra-curricular Activities

Frequency of Participation	Percentage of Total Sample
Very Often	25.2
Fairly Often	22.8
Seldom	30.7
Never	21.3
Total	100.0

(N = 254)

Appendix F

Snack Definitions

Snacking Definitions

Key Words	Total Number of Respondents	Percentage of Total Sample
WHEN		
eating between meals	150	59.1
WHY		
satisfy hunger	47	18.6
fill gap until next meal	43	17.0
nibble on something	19	7.5
to replace a meal	10	4.0
something to do when bored	7	2.8
TV habit	5	2.0
quick energy source	3	1.2
habit	1	0.4
Sub-Total	135	53.5
HOW MUCH		
eating a small amount	68	26.7
eating a lot	6	2.4
eating extra that you don't need	2	0.8
Sub-Total	76	29.9

Snacking Definitions, Continued

Key Words	Total Number of Respondents	Percentage of Total Sample
WHAT		
non-nutritious junk food	20	7.8
favorite food	19	7.5
quick	11	4.4
easy to get or make	10	4.0
nutritious	9	3.6
tastes good	5	2.0
fattening	4	1.6
spoils your meal	1	0.4
Sub-Total	79	31.3

Appendix G

Snacking Habits

Table 1

Snack Food Consumption Frequency
and
Rank for Total Sample

Snack Food	Modal Useage Response	Food* Category	Food Category Rank	Overall Rank
fruit	high	1	1	1
plain milk	high	1	2	2
fruit juice	high	1	3.5	3.5
bread/toast	high	1	3.5	3.5
sandwich	high	1	5	5
cheese	moderate	1	6	6
raw vegetables	moderate	1	7	7
cold meats	moderate	1	8	9
salad	moderate	1	9	11
egg	moderate	1	10	12
soup	moderate	1	11	15
crackers	moderate	1	12	18
hamburger	low	1	13	20
pizza	low	1	14	21
pickles	low	1	15	22
cereal	never	1	16	24
sunflower seeds	low	1	17	26
nuts	low	1	18	27

*see note page 168

Table 1, Continued

Snack Food	Modal Useage Response	Food* Category	Food Category Rank	Overall Rank
hot dog	low	1	19	30
muffin	low	1	20	32
yogurt	never	1	21	34
pumpkin seeds	never	1	22	40
ice cream	low	2	1	16
chocolate milk	never	2	2	19
milk shake	low	2	3	31
raisins	never	2	4	36
milk pudding	never	2	5	37
malted milk	never	2	6	38.5
potato chips	low	3	1	13
french fries	moderate	3	2	14
popcorn	low	3	3	28
cheezies	low	3	4	33
pretzels	never	3	5	35
diet pop	never	3	6	38.5

*see note page 168

Table 1, Continued

Snack Food	Modal Useage Response	Food* Category	Food Category Rank	Overall Rank
regular pop	moderate	4	1	8
cookies	moderate	4	2	10
candy bars	moderate	4	3	17
donut	low	4	4	23
cake	low	4	5	25
pie	low	4	6	29

*Food Category 1 = good dental, good nutritional

Food Category 2 = poor dental, good nutritional

Food Category 3 = good dental, poor nutritional

Food Category 4 = poor dental, poor nutritional

Table 2

Frequency of Response to Likert-type Items

(figures expressed as a percentage of the total sample)

ITEM

28. I usually make up my snacks from scratch by putting various foods together.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
10.2	44.1	14.6	21.7	9.4

29. Most of the time I snack on foods that need no additional preparation.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
16.5	49.6	14.6	16.9	2.4

30. In general, I do not like snack foods that are ready-to-eat out of a box or bag.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
6.7	17.0	19.4	41.9	15.0

31. The first thing I usually do when I get home from school is find a snack.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
33.5	35.8	7.9	16.5	6.3

Table 2, Continued

ITEM

32. If I am all alone for the evening I will not usually eat anything.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
5.5	13.0	10.2	37.8	33.5

37. I think that snacking is a major part of my food intake.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
16.5	26.8	19.3	25.6	11.8

46. I think I snack a lot.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
18.2	32.0	14.6	23.7	11.5

50. When I am out with my friends, we usually have a snack.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
9.9	58.1	13.4	13.8	4.7

51. When I snack I am usually at home.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
11.1	46.0	18.7	21.8	2.4

Table 2, Continued

ITEM

52. I usually snack on something while I do my homework.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
6.3	29.2	15.0	34.8	14.6

53. When I snack I am usually at school.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
0.8	18.2	14.2	47.0	19.8

54. When I snack I am usually out with friends or on a date.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
6.3	34.0	18.2	30.4	11.1

55. While I watch TV, I usually have a snack.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
24.5	51.8	8.7	12.3	2.8

56. When I snack, I am usually at work.

Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
5.5	13.8	11.9	43.5	25.3

Table 3

Snack Time

(figures expressed as a percentage of the total sample)

Time	Most Often	Second Most Often	Third Most Often	Least Often	Rank
before breakfast	0.8	0.8	3.7	94.7	4
between breakfast and lunch	5.8	14.5	77.7	2.1	3
after lunch but before evening meal	53.8	40.1	5.7	0.4	1
after evening meal but before bedtime	40.7	44.3	12.2	2.8	2

Table 4

Frequency and Rank of Amount of Money Spent for Snacks at Various Locations

(figures expressed as a percentage of the total sample)

Location	None	Very Little	Some But Not all	All or Most	Rank
Fast Food Outlet	17.8	35.6	34.0	12.6	1
School Cafeteria	18.9	45.3	28.0	7.9	2
Restaurant	27.4	35.5	28.6	8.5	3
Grocery Store	32.3	35.8	19.3	12.6	4
Convenience Store	29.1	42.5	23.6	4.7	5
School Vending Machines	28.1	55.7	15.4	0.8	6
Department Store Snack Bar	37.8	42.6	17.1	2.4	7
Drugstore Food Section	53.5	37.4	9.1	0.0	8

Table 5

Snack Companion

(figures expressed as a percentage of the total sample)

Companion	Most Often	Second Most Often	Third Most Often	Least Often	Rank
friend	45.7	30.8	14.6	8.9	2
brother/sister	7.1	30.0	40.4	22.5	3
mother/father	2.9	7.9	32.5	56.7	4
myself	47.4	30.4	11.3	10.9	1

Appendix H

Snacking Habits by Demographic Variables

Table 1

Rank Order Correlation of the Total List of Snack Foods Between Demographic Variables and the Total Sample

Variable	Spearman Rho	Significance Level
GRADE:		
10	0.8064	.001
11	0.9550	.001
12	0.9771	.001
AGE:		
15	0.9333	.001
16	0.9669	.001
17	0.9756	.001
18	0.9583	.001
SEX:		
Male	0.9601	.001
Female	0.9263	.001
WEIGHT STATUS:		
Actual/Perceived		
over/over	0.9429	.001
over/under	0.6772	.001
over/correct	0.8993	.001
under/over	0.4547	.003
under/under	0.8452	.001
under/correct	0.9002	.001
correct/over	0.8974	.001
correct/under	0.9004	.001
correct/correct	0.9781	.001

Table 1, Continued

Variable	Spearman Rho	Significance Level
EMPLOYMENT STATUS:		
Job	0.9861	.001
No Job	0.9802	.001
HOME ECONOMICS REGISTRATION:		
No Home Economics	0.9642	.001
Some Junior High Some Senior High	0.9675	.001
Junior High Only	0.9696	.001
Senior High Only	0.9021	.001
MONEY SPENT ON FOOD:		
None	0.9082	.001
$0.01 - $1.00	0.9803	.001
$1.01 - $2.00	0.9734	.001
Over $2.00	0.8790	.001
ITEM 43 (I spend most of my money on snacks)		
Strongly Disagree	0.9045	.001
Disagree	0.9831	.001
Undecided	0.9020	.001
Agree	0.8784	.001
Strongly Agree	0.8785	.001

Table 2

Rank Order Correlation of Category One* Foods
Between Demographic Variables and
the Total Sample

*good dental and good nutritional snacks

Variable	Spearman Rho	Significance Level
GRADE:		
10	0.8787	.001
11	0.9734	.001
12	0.9542	.001
AGE:		
15	0.8928	.001
16	0.9516	.001
17	0.9638	.001
18	0.9550	.001
SEX:		
Male	0.9243	.001
Female	0.9483	.001
WEIGHT STATUS:		
Actual/Perceived		
over/over	0.9160	.001
over/under	0.7884	.001
over/correct	0.8925	.001
under/over	0.4256	.048
under/under	0.8535	.001
under/correct	0.9537	.001
correct/over	0.9213	.001
correct/under	0.8604	.001
correct/correct	0.9675	.001

Table 2, Continued

Variable	Spearman Rho	Significance Level
EMPLOYMENT STATUS:		
Job	0.9692	.001
No Job	0.9554	.001
HOME ECONOMICS REGISTRATION:		
No Home Economics	0.9500	.001
Some Junior High Some Senior High	0.9607	.001
Junior High Only	0.9494	.001
Senior High Only	0.8397	.001
MONEY SPENT ON FOOD:		
None	0.9227	.001
$0.01 - $1.00	0.9661	.001
$1.01 - $2.00	0.9585	.001
Over $2.00	0.8377	.001
ITEM 43 (I spend most of my money on snacks)		
Strongly Disagree	0.8890	.001
Disagree	0.9698	.001
Undecided	0.8918	.001
Agree	0.8341	.001
Strongly Agree	0.8756	.001

Table 3

Rank Order Correlation of Category Two* Foods
Between Demographic Variables and
the Total Sample

*poor dental but good nutritional snacks

Variable	Spearman Rho	Significance Level
GRADE:		
10	0.4286	.397
11	0.8986	.015
12	1.0000	.001
AGE:		
15	0.9429	.005
16	0.7714	.072
17	1.0000	.001
18	0.9856	.001
SEX:		
Male	0.9856	.001
Female	1.0000	.001
WEIGHT STATUS:		
Actual/Perceived		
over/over	0.8286	.042
over/under	0.3395	.510
over/correct	0.8857	.019
under/over	0.8783	.021
under/under	0.8286	.042
under/correct	0.7714	.072
correct/over	0.9856	.001
correct/under	0.7714	.072
correct/correct	0.9429	.005

Table 3, Continued

Variable	Spearman Rho	Significance Level
EMPLOYMENT STATUS:		
Job	0.9429	.005
No Job	0.9429	.005
HOME ECONOMICS REGISTRATION:		
No Home Economics	0.9856	.001
Some Junior High Some Senior High	0.8286	.042
Junior High Only	1.0000	.001
Senior High Only	0.7143	.111
MONEY SPENT ON FOOD:		
None	0.9429	.005
$0.01 - $1.00	1.0000	.001
$1.01 - $2.00	0.8857	.019
Over $2.00	0.8407	.036
ITEM 43 (I spend most of my money on snacks)		
Strongly Disagree	1.0000	.001
Disagree	0.9429	.005
Undecided	0.7537	.084
Agree	0.8857	.019
Strongly Agree	0.7714	.072

Table 4

Rank Order Correlation of Category Three* Foods
Between Demographic Variables and the Total Sample

*good dental but poor nutritional snacks

Variable	Spearman Rho	Significance Level
GRADE:		
10	1.0000	.001
11	0.9429	.005
12	1.0000	.001
AGE:		
15	1.0000	.001
16	0.8857	.019
17	0.9429	.005
18	1.0000	.001
SEX:		
Male	0.8857	.019
Female	0.9429	.005
WEIGHT STATUS:		
Actual/Perceived		
over/over	0.9856	.001
over/under	0.1765	.738
over/correct	0.8857	.019
under/over	-0.1518	.774
under/under	0.9429	.005
under/correct	0.4286	.397
correct/over	0.7714	.072
correct/under	0.9429	.005
correct/correct	1.0000	.001

Table 4, Continued

Variable	Spearman Rho	Significance Level
EMPLOYMENT STATUS:		
Job	0.9429	.005
No Job	1.0000	.001
HOME ECONOMICS REGISTRATION:		
No Home Economics	1.0000	.001
Some Junior High Some Senior High	0.8857	.019
Junior High Only	1.0000	.001
Senior High Only	0.9429	.005
MONEY SPENT ON FOOD:		
None	0.9276	.008
$0.01 - $1.00	1.0000	.001
$1.01 - $2.00	0.9429	.005
Over $2.00	0.9290	.005
ITEM 43 (I spend most of my money on snacks)		
Strongly Disagree	1.0000	.001
Disagree	1.0000	.001
Undecided	0.9276	.008
Agree	0.9429	.005
Strongly Agree	0.9429	.005

Table 5

Rank Order Correlation of Category Four* Foods
Between Demographic Variables and the Total Sample

*poor dental and poor nutritional snacks

Variable	Spearman Rho	Significance Level
GRADE:		
10	0.9429	.005
11	0.8117	.050
12	0.9276	.008
AGE:		
15	0.9429	.005
16	0.9429	.005
17	0.8857	.019
18	0.9429	.005
SEX:		
Male	0.9429	.005
Female	0.4286	.397
WEIGHT STATUS:		
Actual/Perceived		
over/over	0.8407	.036
over/under	0.8452	.034
over/correct	0.4638	.354
under/over	0.5409	.268
under/under	0.6377	.173
under/correct	0.8286	.042
correct/over	0.7945	.059
correct/under	0.8407	.036
correct/correct	1.0000	.001

Table 5, Continued

Variable	Spearman Rho	Significance Level
EMPLOYMENT STATUS:		
Job	1.0000	.001
No Job	0.9429	.005
HOME ECONOMICS REGISTRATION:		
No Home Economics	0.9429	.005
Some Junior High Some Senior High	0.8986	.015
Junior High Only	0.8857	.019
Senior High Only	0.8817	.050
MONEY SPENT ON FOOD:		
None	0.5798	.228
$0.01 - $1.00	0.8857	.019
$1.01 - $2.00	1.0000	.001
Over $2.00	0.8117	.050
ITEM 43 (I spend most of my money on snacks)		
Strongly Disagree	0.7714	.072
Disagree	0.9429	.005
Undecided	0.6571	.156
Agree	0.9429	.005
Strongly Agree	1.0000	.001

Table 6

Rank Order Correlation of Snack Time
Between Demographic Variables and the Total Sample

Variable	Spearman Rho	Significance Level
GRADE:		
10	1.0000	.001
11	1.0000	.001
12	1.0000	.001
AGE:		
15	1.0000	.001
16	1.0000	.001
17	1.0000	.001
18	1.0000	.001
SEX:		
Male	1.0000	.001
Female	1.0000	.001
WEIGHT STATUS:		
Actual/Perceived		
over/over	1.0000	.001
over/under	0.8000	.200
over/correct	0.8000	.200
under/over	0.9487	.051
under/under	0.9487	.051
under/correct	0.9487	.051
correct/over	1.0000	.001
correct/under	1.0000	.001
correct/correct	1.0000	.001

Table 6, Continued

Variable	Spearman Rho	Significance Level
EMPLOYMENT STATUS:		
Job	1.0000	.001
No Job	1.0000	.001
HOME ECONOMICS REGISTRATION:		
No Home Economics	0.8000	.200
Some Junior High Some Senior High	1.0000	.001
Junior High Only	1.0000	.001
Senior High Only	1.0000	.001
MONEY SPENT ON FOOD:		
None	1.0000	.001
$0.01 - $1.00	1.0000	.001
$1.01 - $2.00	1.0000	.001
Over $2.00	1.0000	.001
ITEM 43 (I spend most of my money on snacks)		
Strongly Disagree	1.0000	.001
Disagree	1.0000	.001
Undecided	1.0000	.001
Agree	1.0000	.001
Strongly Agree	1.0000	.001

Table 7

"I spend most of my money on snacks"

by

Item 31 - "The first thing I usually do when I get home from school is find a snack"

(figures expressed as a percentage of the total sample)

Item 31	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Strongly Disagree	3.9	2.4	-	-	-
Disagree	7.5	5.1	1.6	2.0	0.4
Undecided	3.1	2.0	2.4	-	0.4
Agree	14.6	15.0	1.6	3.1	1.6
Strongly Agree	12.6	11.4	2.7	2.8	3.9

(N = 254, Chi-Square = 28.99, df = 16, $p = 0.0240$, $Eta^2 = 0.027$)

Table 8

"I spend most of my money on snacks"

by

Item 55 - "While I watch TV I usually have a snack"

(figures expressed as a percentage of the total sample)

Item 55	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Strongly Disagree	2.4	-	-	-	0.4
Disagree	6.7	4.3	0.4	0.4	0.4
Undecided	5.1	2.0	-	0.8	0.8
Agree	17.8	20.2	5.9	5.9	2.0
Strongly Agree	9.9	9.1	2.0	0.8	2.8

(N = 253, Chi-Square = 27.13, df = 16,
p = 0.0400, Eta^2 = 0.033)

Table 9

"I spend most of my money on snacks"

by

Item 52 - "I usually snack on something while I do my homework"

(figures expressed as a percentage of the total sample)

Item 52	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Strongly Disagree	10.3	3.2	0.8	-	0.4
Disagree	11.9	16.6	2.4	2.7	1.2
Undecided	5.5	5.1	1.2	2.4	0.8
Agree	11.5	9.1	3.1	2.4	3.2
Strongly Agree	2.7	1.6	0.8	0.4	0.8

(N = 253, Chi-Square = 28.21, df = 16, $p = 0.0298$, $Eta^2 = 0.037$)

Table 10

Amount of Money Spent per Day

by

Item 54 - "When I snack I am usually out with friends or on a date"

(figures expressed as a percentage of the total sample)

Item 54	None	$0.01 to $1.00	$1.01 to $2.00	Over $2.00
Strongly Disagree	2.8	4.4	2.0	1.6
Disagree	3.2	18.8	6.8	1.6
Undecided	2.0	10.8	4.8	0.8
Agree	4.0	17.6	7.2	5.6
Strongly Agree	-	3.2	0.4	2.4

(N = 250, Chi-Square = 26.93, df = 12, $p = 0.0079$, $Eta^2 = 0.037$)

Table 11

Rank Order Correlation of Snack Location
Between Demographic Variables and the Total Sample

Variable	Spearman Rho	Significance Level
GRADE:		
10	0.9048	.002
11	0.9762	.001
12	0.9762	.001
AGE:		
15	0.9157	.001
16	0.9762	.001
17	1.0000	.001
18	0.9048	.002
SEX:		
Male	0.9286	.001
Female	0.9524	.001
WEIGHT STATUS:		
Actual/Perceived		
over/over	0.7857	.021
over/under	0.6183	.102
over/correct	0.9581	.001
under/over	0.5436	.164
under/under	0.5509	.157
under/correct	0.9286	.001
correct/over	0.8095	.015
correct/under	0.9048	.002
correct/correct	0.9222	.001

Table 11, Continued

Variable	Spearman Rho	Significance Level
EMPLOYMENT STATUS:		
Job	0.9762	.001
No Job	0.8333	.010
HOME ECONOMICS REGISTRATION:		
No Home Economics	0.9048	.002
Some Junior High Some Senior High	0.9048	.002
Junior High Only	0.9286	.001
Senior High Only	0.8571	.007
MONEY SPENT ON FOOD:		
None	0.6429	.086
$0.01 - $1.00	0.9048	.002
$1.01 - $2.00	0.9762	.001
Over $2.00	0.8623	.006
ITEM 43 (I spend most of my money on snacks)		
Strongly Disagree	0.9762	.001
Disagree	0.9940	.001
Undecided	0.7665	.027
Agree	0.7229	.043
Strongly Agree	0.9048	.002

Table 12

Amount of Money Spent per Day

by

Item 51 - "When I snack I am usually at home"

(figures expressed as a percentage of the total sample)

Item 51	None	$0.01 to $1.00	$1.01 to $2.00	Over $2.00
Strongly Disagree	0.4	1.2	-	0.4
Disagree	2.4	7.2	6.8	5.6
Undecided	2.4	9.2	5.2	1.6
Agree	5.2	29.3	8.0	3.6
Strongly Agree	1.6	8.0	0.8	0.8

(N = 249, Chi-Square = 27.85, df = 12,
p = 0.0058, Eta^2 = 0.076)

Table 13

Age by Item 51 - "When I snack I am usually at home"

(figures expressed as a percentage of the total sample)

	Age				
Item 51	15	16	17	18	19
Strongly Disagree	0.4	1.6	-	0.4	-
Disagree	1.2	5.2	11.1	4.4	-
Undecided	1.6	4.4	8.3	4.4	-
Agree	9.9	10.3	17.1	8.3	0.4
Strongly Agree	2.4	5.2	2.4	1.2	-

(N = 252, Chi-Square = 27.19, df = 16,
p = 0.0394, Eta^2 = 0.036)

Table 14

Grade by Item 51 - "When I snack I am usually at home"

(figures expressed as a percentage of the total sample)

	Grade		
Item 51	10	11	12
Strongly Disagree	0.4	1.6	0.4
Disagree	1.6	7.2	12.7
Undecided	1.6	6.4	10.8
Agree	12.7	11.6	21.9
Strongly Agree	4.0	3.6	3.6

(N = 251, Chi-Square = 22.85, df = 8,
$p = 0.0036$, $Eta^2 = 0.057$)

Table 15

Amount of Money Spent per Day

by

Item 53 - "When I snack I am usually at school"

(figures expressed as a percentage of the total sample)

Item 54	None	$0.01 to $1.00	$1.01 to $2.00	Over $2.00
Strongly Disagree	5.6	10.4	2.4	1.6
Disagree	4.8	28.0	9.6	4.0
Undecided	1.2	6.8	3.6	2.8
Agree	0.4	9.2	5.6	3.2
Strongly Agree	-	0.4	-	0.4

(N = 250, Chi-Square = 28.06, df = 12,
p = 0.0054, Eta^2 = 0.079)

Table 16

"I spend most of my money on snacks"

by

Item 53 - "When I snack I am usually at school"

(figures expressed as a percentage of the total sample)

Item 53	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Strongly Disagree	13.8	2.8	1.2	1.2	0.8
Disagree	19.0	20.1	2.8	3.2	2.0
Undecided	3.9	5.1	2.4	1.6	1.2
Agree	5.1	7.1	1.6	2.0	2.4
Strongly Agree	-	0.4	0.4	-	-

(N = 253, Chi-Square = 37.57, df = 16,
p = 0.0017, Eta^2 = 0.079)

Table 17

Sex by Item 56 - "When I snack I am usually at work"

(figures expressed as a percentage of the total sample)

Item 56	Male	Female
Strongly Disagree	8.7	16.6
Disagree	17.4	26.1
Undecided	6.3	5.5
Agree	9.5	4.3
Strongly Agree	3.6	2.0

(N = 253, Chi-Square = 14.79, df = 4,
p = 0.0052, Eta^2 = 0.053)

Table 18

Employment Status

by

Item 56 - "When I snack I am usually at work"

(figures expressed as a percentage of the total sample)

Item 56	Part-time Job
Strongly Disagree	9.5
Disagree	23.8
Undecided	7.5
Agree	11.5
Strongly Agree	5.6

(N = 252, Chi-Square = 30.14, df = 4,
p = 0.000, Eta^2 = 0.118)

Table 19

"I spend most of my money on snacks"

by

Item 56 - "When I snack I am usually at work"

(figures expressed as a percentage of the total sample)

Item 56	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Strongly Disagree	14.2	7.9	1.6	0.4	1.2
Disagree	17.8	18.6	3.2	2.8	1.2
Undecided	4.3	3.6	1.2	1.6	1.2
Agree	3.6	4.7	1.6	2.8	1.2
Strongly Agree	2.0	0.8	0.8	0.4	1.5

(N = 253, Chi-Square = 36.84, df = 16,
p = 0.0022, Eta^2 = 0.086)

Table 20

Rank Order Correlation of Snack Companion
Between Demographic Variables and the Total Sample

Variable	Spearman Rho	Significance Level
GRADE:		
10	0.8000	.200
11	1.0000	.001
12	1.0000	.001
AGE:		
15	0.8000	.200
16	1.0000	.001
17	1.0000	.001
18	0.8000	.200
SEX:		
Male	1.0000	.001
Female	0.8000	.200
WEIGHT STATUS:		
Actual/Perceived		
over/over	1.0000	.001
over/under	0.8000	.200
over/correct	1.0000	.001
under/over	0.8000	.200
under/under	0.8000	.200
under/correct	0.8000	.200
correct/over	1.0000	.001
correct/under	0.8000	.200
correct/correct	0.8000	.200

Table 20, Continued

Variable	Spearman Rho	Significance Level
EMPLOYMENT STATUS:		
Job	0.8000	.200
No Job	1.0000	.001
HOME ECONOMICS REGISTRATION:		
No Home Economics	1.0000	.001
Some Junior High Some Senior High	0.8000	.200
Junior High Only	0.8000	.200
Senior High Only	0.8000	.200
MONEY SPENT ON FOOD:		
None	1.0000	.001
$0.01 - $1.00	1.0000	.001
$1.01 - $2.00	0.8000	.200
Over $2.00	0.8000	.200
ITEM 43 (I spend most of my money on snacks)		
Strongly Disagree	1.0000	.001
Disagree	0.8000	.200
Undecided	0.8000	.200
Agree	0.8000	.200
Strongly Agree	1.0000	.001

Table 21

Sex by Item 32 - "If I am all alone for the evening I will not usually eat anything"

(figures expressed as a percentage of the total sample)

Item 32	Male	Female
Strongly Disagree	19.3	14.2
Disagree	17.3	20.5
Undecided	4.7	5.5
Agree	2.4	10.6
Strongly Agree	1.6	3.9

(N = 254, Chi-Square = 16.63, df = 4, p = 0.0023, Eta^2 = 0.055)

Table 22

Amount of Money Spent per Day

by

Item 50 - "When I am out with friends we usually have a snack"

(figures expressed as a percentage of the total sample)

Item 50	None	$0.01 to $1.00	$1.01 to $2.00	Over $2.00
Strongly Disagree	1.6	2.0	-	-
Disagree	1.6	8.0	2.8	1.6
Undecided	4.0	6.4	2.4	0.8
Agree	4.4	31.6	14.4	8.4
Strongly Agree	0.4	6.8	1.6	1.2

(N = 250, Chi-Square = 27.55, df = 12, p = 0.0064, Eta^2 = 0.046)

Table 23

Grade by Item 46 - "I think I snack a lot"

(figures expressed as a percentage of the total sample)

	Grade		
Item 46	10	11	12
Strongly Disagree	1.6	6.0	4.0
Disagree	3.6	9.9	9.9
Undecided	3.6	2.4	8.7
Agree	7.1	5.6	19.4
Strongly Agree	4.4	6.7	7.1

(N = 252, Chi-Square = 22.49, df = 8,
p = 0.0041, Eta^2 = 0.027)

Table 24

Age by Item 46 - "I think I snack a lot"

(figures expressed as a percentage of the total sample)

	Age				
Item 46	15	16	17	18	19
Strongly Disagree	1.2	4.7	4.0	1.6	-
Disagree	3.2	7.5	10.7	2.0	0.4
Undecided	3.6	1.2	7.9	2.0	-
Agree	5.1	5.5	11.5	9.9	-
Strongly Agree	2.4	7.9	4.7	3.2	-

(N = 253, Chi-Square = 37.02, df = 16,
p = 0.0021, Eta^2 = 0.026)

Table 25

"I spend most of my money on snacks"

by

Item 46 - "I think I snack a lot"

(figures expressed as a percentage of the total sample)

Item 46	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Strongly Disagree	9.1	1.6	-	-	0.8
Disagree	11.5	10.3	-	1.2	0.8
Undecided	5.5	6.7	1.2	0.8	0.4
Agree	8.7	11.9	5.1	4.7	1.6
Strongly Agree	7.1	5.1	2.0	1.2	2.7

(N = 253, Chi-Square = 50.93, df = 16,
$p = 0.0000$, $Eta^2 = 0.097$)

Table 26

"I spend most of my money on snacks"

by

Item 37 - "I think that snacking is a major part of my food intake"

(figures expressed as a percentage of the total sample)

Item 37	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Strongly Disagree	7.9	2.0	-	0.8	1.2
Disagree	12.2	9.4	1.6	2.0	0.4
Undecided	6.3	7.9	2.0	1.2	2.0
Agree	9.1	11.8	2.7	3.1	-
Strongly Agree	6.3	4.7	2.0	0.8	2.7

(N = 254, Chi-Square = 34.27, df = 16, p = 0.005, Eta^2 = 0.037)

Appendix I

Snacking Habits by Family Background Variables

Table 1

Rank Order Correlation of the Total List of Snack Foods Between Family Background Variables and the Total Sample

Variable		Spearman Rho	Significance Level
HOUSEHOLD SIZE:			
Small		0.9477	.001
Medium		0.9479	.001
Large		0.8646	.001
GATEKEEPER OF MEALS:			
Grocery Shopper	Decision Maker		
parents	parents	0.9840	.001
parents	brother,sister	0.7156	.001
parents	self	0.8825	.001
brother, sister	brother, sister	-0.2952	.064
self	self	0.8354	.001
MEAL PATTERNS:			
No Meals		0.9527	.001
Some Meals		0.9976	.001

Table 1, Continued

Variable	Spearman Rho	Significance Level
PARENT'S INFLUENCE:		
Not Classifiable	0.9951	.001
High	0.5128	.001
Low	0.9433	.001
CONGENIAL INTERACTION:		
Very Congenial	0.9952	.001
Undecided	0.9564	.001
Not Congenial	0.9564	.001

Table 2

Rank Order Correlation of Category One* Foods
Between Family Background Variables and the Total Sample

*good dental and good nutritional snacks

Variable		Spearman Rho	Significance Level
HOUSEHOLD SIZE:			
Small		0.9517	.001
Medium		0.8684	.001
Large		0.8964	.001
GATEKEEPER OF MEALS:			
Grocery Shopper	Decision Maker		
parents	parents	0.9918	.001
parents	brother,sister	0.8019	.001
parents	self	0.8539	.001
brother, sister	brother, sister	-0.2012	.369
self	self	0.9095	.001
MEAL PATTERNS:			
No Meals		0.9559	.001
Some Meals		0.9977	.001

Table 2, Continued

Variable	Spearman Rho	Significance Level
PARENT'S INFLUENCE:		
Not Classifiable	0.9949	.001
High	0.3858	.076
Low	0.9307	.001
CONGENIAL INTERACTION:		
Very Congenial	0.9986	.001
Undecided	0.9652	.001
Not Congenial	0.9310	.001

Table 3

Rank Order Correlation of Category Two* Foods
Between Family Background Variables and the Total Sample

*poor dental but good nutritional snacks

Variable		Spearman Rho	Significance Level
HOUSEHOLD SIZE:			
Small		0.6571	.156
Medium		1.0000	.001
Large		0.6571	.156
GATEKEEPER OF MEALS:			
Grocery Shopper	Decision Maker		
parents	parents	1.0000	.001
parents	brother,sister	0.8827	.020
parents	self	0.7714	.072
brother, sister	brother, sister	-0.8024	.055
self	self	0.4395	.383
MEAL PATTERNS:			
No Meals		0.7537	.084
Some Meals		1.0000	.001

Table 3, Continued

Variable	Spearman Rho	Significance Level
PARENT'S INFLUENCE:		
Not Classifiable	1.0000	.001
High	0.8783	.021
Low	0.7714	.072
CONGENIAL INTERACTION:		
Very Congenial	0.9429	.005
Undecided	1.0000	.001
Not Congenial	0.9429	.005

Table 4

Rank Order Correlation of Category Three* Foods
Between Family Background Variables and the Total Sample

*good dental but poor nutritional snacks

Variable		Spearman Rho	Significance Level
HOUSEHOLD SIZE:			
Small		0.9429	.005
Medium		1.0000	.001
Large		0.7590	.080
GATEKEEPER OF MEALS:			
Grocery Shopper	Decision Maker		
parents	parents	1.0000	.001
parents	brother,sister	0.7537	.084
parents	self	0.9429	.005
brother, sister	brother, sister	-0.5071	.305
self	self	0.9411	.005
MEAL PATTERNS:			
No Meals		1.0000	.001
Some Meals		1.0000	.001

Table 4, Continued

Variable	Spearman Rho	Significance Level
PARENT'S INFLUENCE:		
Not Classifiable	1.0000	.001
High	0.6211	.188
Low	0.9856	.001
CONGENIAL INTERACTION:		
Very Congenial	1.0000	.001
Undecided	0.8857	.019
Not Congenial	0.9429	.005

Table 5

Rank Order Correlation of Category Four* Foods
Between Family Background Variables and the Total Sample

*poor dental and poor nutritional snacks

Variable		Spearman Rho	Significance Level
HOUSEHOLD SIZE:			
Small		0.9429	.005
Medium		1.0000	.001
Large		0.8286	.042
GATEKEEPER OF MEALS:			
Grocery Shopper	Decision Maker		
parents	parents	0.9429	.005
parents	brother,sister	0.7715	.072
parents	self	0.8286	.042
brother, sister	brother, sister	0.6547	.158
self	self	0.2125	.686
MEAL PATTERNS:			
No Meals		0.8286	.042
Some Meals		0.9856	.001

Table 5, Continued

Variable	Spearman Rho	Significance Level
PARENT'S INFLUENCE:		
Not Classifiable	1.0000	.001
High	0.6211	.188
Low	0.9429	.005
CONGENIAL INTERACTION:		
Very Congenial	1.0000	.001
Undecided	0.8286	.042
Not Congenial	1.0000	.001

Table 6

Gatekeeper by

Item 30 - "In general I do not like snack foods that are ready-to-eat out of a box or bag"

(figures expressed as a percentage of the total sample)

Gatekeeper	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
parents/ parents	13.1	36.4	19.0	14.6	3.6
parents/ brother, sister	-	0.4	-	0.4	0.8
parents/ self	1.2	4.0	0.4	2.0	2.0
brother, sister/ brother, sister	-	-	-	-	0.4
self/ self	0.8	1.2	-	-	-

(N = 253, Chi-Square = 44.70, df = 16
p = 0.0002, Eta^2 = 0.070)

Table 7

Rank Order Correlation of Snack Time
Between Family Background Variables and the Total Sample

Variable		Spearman Rho	Significance Level
HOUSEHOLD SIZE:			
Small		1.0000	.001
Medium		1.0000	.001
Large		1.0000	.001
GATEKEEPER OF MEALS:			
Grocery Shopper	Decision Maker		
parents	parents	1.0000	.001
parents	brother,sister	1.0000	.001
parents	self	1.0000	.001
brother, sister	brother, sister	-0.8000	.200
self	self	0.8000	.200
MEAL PATTERNS:			
No Meals		1.0000	.001
Some Meals		1.0000	.001

Table 7, Continued

Variable	Spearman Rho	Significance Level
PARENT'S INFLUENCE:		
Not Classifiable	1.0000	.001
High	1.0000	.001
Low	1.0000	.001
CONGENIAL INTERACTION:		
Very Congenial	1.0000	.001
Undecided	1.0000	.001
Not Congenial	0.8000	.200

Table 8

Congenial Interaction Among Household Members

by

Item 52 - "I usually snack on something while I do my homework"

(figures expressed as a percentage of the total sample)

Item 52	Very Congenial	Undecided	Not Congenial
Strongly Disagree	12.6	0.4	1.6
Disagree	26.9	2.8	5.1
Undecided	10.7	3.5	0.8
Agree	21.7	4.3	3.2
Strongly Agree	3.2	1.2	2.0

(N = 253, Chi-Square = 17.85, df = 8, $p = 0.0224$, $Eta^2 = 0.026$)

Table 9

Rank Order Correlation of Snack Location
Between Family Background Variables and the Total Sample

Variable		Spearman Rho	Significance Level
HOUSEHOLD SIZE:			
Small		0.9581	.001
Medium		0.8571	.007
Large		0.7120	.048
GATEKEEPER OF MEALS:			
Grocery Shopper	Decision Maker		
parents	parents	1.0000	.001
parents	brother,sister	0.7711	.025
parents	self	0.7904	.020
brother, sister	brother, sister	0.0962	.821
self	self	0.6627	.073
MEAL PATTERNS:			
No Meals		0.9222	.001
Some Meals		1.0000	.001

Table 9, Continued

Variable	Spearman Rho	Significance Level
PARENT'S INFLUENCE:		
Not Classifiable	1.0000	.001
High	0.6173	.103
Low	0.8810	.004
CONGENIAL INTERACTION:		
Very Congenial	1.0000	.001
Undecided	0.8434	.009
Not Congenial	0.8571	.007

Table 10

Meal Patterns of the Household

by

Item 56 - "When I snack I am usually at work"

(figures expressed as a percentage of the total sample)

Item 56	No Meals Eaten Together	Some Meals Eaten Together
Strongly Disagree	3.2	22.1
Disagree	3.9	39.5
Undecided	2.4	9.5
Agree	3.9	9.9
Strongly Agree	1.2	4.4

(N = 253, Chi-Square = 9.60, df = 4,
p = 0.0478, Eta^2 = 0.023)

Table 11

Rank Order Correlation of Snack Companion
Between Family Background Variables and the Total Sample

Variable		Spearman Rho	Significance Level
HOUSEHOLD SIZE:			
Small		0.8000	.200
Medium		1.0000	.001
Large		0.8000	.200
GATEKEEPER OF MEALS:			
Grocery Shopper	Decision Maker		
parents	parents	0.9487	.051
parents	brother,sister	0.9487	.051
parents	self	1.0000	.001
brother, sister	brother, sister	-0.2000	.800
self	self	0.6000	.400
MEAL PATTERNS:			
No Meals		0.8000	.200
Some Meals		1.0000	.001

Table 11, Continued

Variable	Spearman Rho	Significance Level
PARENT'S INFLUENCE:		
Not Classifiable	1.0000	.001
High	0.8000	.200
Low	0.8000	.200
CONGENIAL INTERACTION:		
Very Congenial	0.8000	.200
Undecided	1.0000	.001
Not Congenial	0.8000	.200

Table 12

Meal Patterns of the Household

by

Item 37 - "I think that snacking is a major part of my food intake"

(figures expressed as a percentage of the total sample)

Item 37	No Meals Eaten Together	Some Meals Eaten Together
Strongly Disagree	2.0	9.8
Disagree	2.0	23.6
Undecided	2.0	17.3
Agree	2.8	24.0
Strongly Agree	5.9	10.6

(N = 254, Chi-Square = 19.41, df = 4, $p = 0.0007$, $Eta^2 = 0.025$)

Table 13

Gatekeeper by

Item 37 - "I think that snacking is a major part of my food intake"

(figures expressed as a percentage of the total sample)

Gatekeeper	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
parents/ parents	10.2	22.4	17.8	25.2	11.0
parents/ brother, sister	-	0.8	-	-	0.8
parents/ self	1.2	1.6	1.6	1.6	3.6
brother, sister/ brother, sister	-	-	-	-	0.4
self/ self	0.4	0.8	-	-	0.8

(N = 254, Chi-Square = 26.33, df = 16
p = 0.0495, Eta^2 = 0.021)

Appendix J

Snacking Habits by Psychographic Variables

Table 1

Rank Order Correlation of the Total List of Snack Foods Between Psychographic Variables and the Total Sample

Variable	Spearman Rho	Significance Level
PEER GROUP INFLUENCE:		
Not classifiable	0.9802	.001
Low	0.9660	.001
MEAL SKIPPING:		
Not Classifiable	0.9975	.001
High	0.1936	.231
Moderate	0.7562	.001
Low	0.9378	.001
INTERACTION WITH OTHERS:		
Not Classifiable	0.9855	.001
High	0.9857	.001
Low	0.9468	.001
PARTICIPATION IN SPORTS:		
Not Classifiable	0.9736	.001
High	0.9838	.001
Low	0.9790	.001
EXTRA-CURRICULAR ACTIVITIES:		
Very Often	0.9652	.001
Fairly Often	0.9415	.001
Seldom	0.9530	.001
Never	0.9271	.001

Table 2

Rank Order Correlation of Category One* Foods Between Psychographic Variables and the Total Sample

*good dental and good nutritional snacks

Variable	Spearman Rho	Significance Level
PEER GROUP INFLUENCE:		
Not classifiable	0.9593	.001
Low	0.9675	.001
MEAL SKIPPING:		
Not Classifiable	0.9966	.001
High	0.0962	.670
Moderate	0.7252	.001
Low	0.9056	.001
INTERACTION WITH OTHERS:		
Not Classifiable	0.9876	.001
High	0.9912	.001
Low	0.9483	.001
PARTICIPATION IN SPORTS:		
Not Classifiable	0.9684	.001
High	0.9879	.001
Low	0.9825	.001
EXTRA-CURRICULAR ACTIVITIES:		
Very Often	0.9712	.001
Fairly Often	0.9373	.001
Seldom	0.9110	.001
Never	0.9039	.001

Table 3

Rank Order Correlation of Category Two* Foods Between Psychographic Variables and the Total Sample

*poor dental but good nutritional snacks

Variable	Spearman Rho	Significance Level
PEER GROUP INFLUENCE:		
Not classifiable	1.0000	.001
Low	0.8857	.019
MEAL SKIPPING:		
Not Classifiable	1.0000	.001
High	0.5161	.295
Moderate	0.7775	.069
Low	0.9429	.005
INTERACTION WITH OTHERS:		
Not Classifiable	1.0000	.001
High	0.7714	.072
Low	1.0000	.001
PARTICIPATION IN SPORTS:		
Not Classifiable	0.8857	.019
High	1.0000	.001
Low	0.9856	.001
EXTRA-CURRICULAR ACTIVITIES:		
Very Often	1.0000	.001
Fairly Often	0.9856	.001
Seldom	0.9429	.005
Never	0.8857	.019

Table 4

Rank Order Correlation of Category Three* Foods Between Psychographic Variables and the Total Sample

*good dental but poor nutritional snacks

Variable	Spearman Rho	Significance Level
PEER GROUP INFLUENCE:		
Not classifiable	1.0000	.001
Low	0.9429	.005
MEAL SKIPPING:		
Not Classifiable	1.0000	.001
High	0.3586	.485
Moderate	0.7407	.092
Low	0.9856	.001
INTERACTION WITH OTHERS:		
Not Classifiable	0.9429	.005
High	1.0000	.001
Low	0.9276	.008
PARTICIPATION IN SPORTS:		
Not Classifiable	0.9856	.001
High	0.9429	.005
Low	1.0000	.001
EXTRA-CURRICULAR ACTIVITIES:		
Very Often	0.8857	.019
Fairly Often	0.9856	.001
Seldom	1.0000	.001
Never	0.9429	.005

Table 5

Rank Order Correlation of Category Four* Foods Between Psychographic Variables and the Total Sample

*poor dental and poor nutritional snacks

Variable	Spearman Rho	Significance Level
PEER GROUP INFLUENCE:		
Not classifiable	1.0000	.001
Low	1.0000	.001
MEAL SKIPPING:		
Not Classifiable	1.0000	.001
High	0.5591	.249
Moderate	0.9411	.005
Low	1.0000	.001
INTERACTION WITH OTHERS:		
Not Classifiable	0.9276	.008
High	1.0000	.001
Low	0.8117	.050
PARTICIPATION IN SPORTS:		
Not Classifiable	1.0000	.001
High	1.0000	.001
Low	0.8857	.019
EXTRA-CURRICULAR ACTIVITIES:		
Very Often	0.8286	.042
Fairly Often	0.9429	.005
Seldom	0.9429	.005
Never	1.0000	.001

Table 6

Rank Order Correlation of Snack Time
Between Psychographic Variables and the Total Sample

Variable	Spearman Rho	Significance Level
PEER GROUP INFLUENCE:		
Not classifiable	1.0000	.001
Low	1.0000	.001
MEAL SKIPPING:		
Not Classifiable	1.0000	.001
High	1.0000	.001
Moderate	0.8000	.200
Low	1.0000	.001
INTERACTION WITH OTHERS:		
Not Classifiable	1.0000	.001
High	1.0000	.001
Low	0.8000	.200
PARTICIPATION IN SPORTS:		
Not Classifiable	1.0000	.001
High	1.0000	.001
Low	1.0000	.001
EXTRA-CURRICULAR ACTIVITIES:		
Very Often	1.0000	.001
Fairly Often	1.0000	.001
Seldom	0.2000	.800
Never	1.0000	.001

Table 7

Meal Skipping by

Item 52 - "I usually snack on something while I do my homework"

(figures expressed as a percentage of the total sample)

Item 52	Not Classifiable	High	Moderate	Low
Strongly Disagree	11.5	-	-	3.2
Disagree	21.7	-	-	13.1
Undecided	7.9	-	0.4	6.7
Agree	22.1	0.4	-	6.7
Strongly Agree	3.5	0.4	0.4	2.0

(N = 253, Chi-Square = 26.07, df = 12
p = 0.0105, Eta^2 = 0.025)

Table 8

Rank Order Correlation of Snack Location
Between Psychographic Variables and the Total Sample

Variable	Spearman Rho	Significance Level
PEER GROUP INFLUENCE:		
Not classifiable	1.0000	.001
Low	0.9762	.001
MEAL SKIPPING:		
Not Classifiable	1.0000	.001
High	0.6274	.096
Moderate	0.9258	.001
Low	0.9701	.001
INTERACTION WITH OTHERS:		
Not Classifiable	0.9286	.001
High	0.9524	.001
Low	0.6667	.071
PARTICIPATION IN SPORTS:		
Not Classifiable	0.9524	.001
High	0.9762	.001
Low	0.9341	.001
EXTRA-CURRICULAR ACTIVITIES:		
Very Often	0.9524	.001
Fairly Often	0.9701	.001
Seldom	0.9048	.002
Never	0.8024	.017

Table 9

Interaction With Others by

Item 51 - "When I snack I am usually at home"

(figures expressed as a percentage of the total sample)

Item 51	Not Classifiable	High	Low
Strongly Disagree	0.4	2.0	-
Disagree	7.6	12.3	2.0
Undecided	8.3	8.7	1.6
Agree	21.9	18.3	5.9
Strongly Agree	5.5	2.4	3.2

(N = 252, Chi-Square = 18.13, df = 8
$p = 0.0203$, $Eta^2 = 0.057$)

Table 10

Participation in Sports by

Item 56 - "When I snack I am usually at work"

(figures expressed as a percentage of the total sample)

Item 56	Not Classifiable	High	Low
Strongly Disagree	1.2	17.8	6.3
Disagree	7.9	24.5	11.1
Undecided	2.8	6.7	2.4
Agree	4.7	7.1	2.0
Strongly Agree	0.4	4.0	1.2

(N = 253, Chi-Square = 17.32, df = 8
$p = 0.0270$, $Eta^2 = 0.027$)

Table 11

Rank Order Correlation of Snack Companion
Between Psychographic Variables and the Total Sample

Variable	Spearman Rho	Significance Level
PEER GROUP INFLUENCE:		
Not classifiable	0.8000	.200
Low	1.0000	.001
MEAL SKIPPING:		
Not Classifiable	1.0000	.001
High	1.0000	.001
Moderate	0.8944	.106
Low	0.8000	.200
INTERACTION WITH OTHERS:		
Not Classifiable	1.0000	.001
High	0.8000	.200
Low	1.0000	.001
PARTICIPATION IN SPORTS:		
Not Classifiable	1.0000	.001
High	0.8000	.200
Low	1.0000	.001
EXTRA-CURRICULAR ACTIVITIES:		
Very Often	1.0000	.001
Fairly Often	0.2000	.800
Seldom	1.0000	.001
Never	0.8000	.200

Table 12

Extra-curricular Activities by

Item 50 - "When I am out with my friends we usually have a snack"

(figures expressed as a percentage of the total sample)

Item 50	Very Often	Fairly Often	Seldom	Never
Strongly Disagree	2.4	1.2	-	1.2
Disagree	4.0	2.4	4.0	3.6
Undecided	2.0	5.1	5.5	0.8
Agree	12.3	12.6	19.8	13.4
Strongly Agree	4.3	1.6	1.6	2.4

(N = 253, Chi-Square = 25.49, df = 12
p = 0.0127, Eta^2 = 0.003)